

# The Dental Digest.

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## Original Contributions.

### SUGGESTIONS ON DEVELOPING AND CONDUCTING A DENTAL PRACTICE ON BUSINESS PRINCIPLES.

BY J. N. CROUSE, D. D. S., CHICAGO, ILL.

It is not the object of the writer to discuss or describe methods of performing individual operations, nor methods of practice except such as relate directly to the business methods of a well-regulated dental office.

Believing that most dental practitioners fail in the executive or business part of a practice, and that this absence of business principles is the cause of many failures, we have undertaken this article, hoping to show wherein some of the mistakes occur in this direction and to be able to give a few hints or suggestions which may help younger practitioners.

It is taken for granted at the outset that every one who expects to succeed has already thoroughly prepared himself both in the theory and details of practice; this of necessity implies that a considerable amount of diligent study and even more of practical manipulation have been given, so that a reasonably correct diagnosis is assured, as well as ability to perform the varied operations which will be required. It would seem as if we were warranted in saying that the higher the degree of perfection in the preparation, both in theory and practical manipulation, the easier it will be to obtain a lucrative, successful practice; but the facts are, that the individual who possesses shrewd business ability and the tact necessary to grapple successfully with the many difficult problems which must be met by every practitioner, can succeed with far too little education and skill, while one professionally

well skilled, but lacking in these qualifications may utterly fail. This being the case, if business qualifications can be acquired in addition to skill and education, success will be pretty sure to follow.

What, then, are the desirable qualifications for a dentist? We should say: A liberal education, manipulative skill, artistic taste, business tact, industry, perseverance, good judgment, even temper, self-control, enthusiasm, and last, but not least, strict integrity. We believe that no profession requires such a variety of talent in its practitioners as the dental profession; no profession needs so much natural ability and breadth of culture; no profession so much demands men of a large type, who will be equal to all emergencies, for in no other profession are the requirements so numerous and exacting. Human nature—that subtle, undefinable, hard to understand, something, which reveals itself constantly in various shapes—this human nature must be met, understood and controlled before a man can become a successful operator, in the full sense of the word.

Every dentist with any amount of practice finds all sorts of dispositions and temperaments to deal with;—the pleasant and the disagreeable, the good natured and the cross, the reasonable and the unreasonable, the honest and the dishonest, the generous and the selfish, the appreciative and the unappreciative, the nervous people out of health, the hysterical subjects, the old maids and bachelors who are seldom well pleased, and the capricious, self-willed and ungoverned children—all of these must be met with, and dealt with, under the most trying circumstances; for the necessary suffering and torture will reveal a very human side to the most amiable disposition. And to meet them and be master of the situation the dentist must first be fully master of himself. A distinguished educator has said that "all education can be summed up as knowing yourself, knowing your fellow-man and how to adapt yourself to your fellow-man." We would especially emphasize the "knowing yourself." A dentist, of all men, must be able to understand and to control himself under all circumstances. He must also be able to readily understand and to control his patients; must possess persuasive ability and enormous powers of endurance. Is it too much to say that he needs all the logic of the lawyer, the scientific knowledge of the physician and

the high moral ideas and sense of responsibility of the clergyman combined?

If the qualifications herein described are necessary for a successful practitioner of dentistry, it is important that before beginning the study of dentistry he has acquired a very considerable cultivation, although a dentist's education need not stop after he commences practice; indeed, it should not stop, and we believe it is a great mistake for dentists to cease to study and to keep themselves posted and alive to interests others than simply the mere routine work of practice. The occupation of dentistry has a tendency to narrow the mind rather than broaden it, especially if one confines himself exclusively to this routine occupation; therefore a dentist should connect himself with studies and interests outside of the dental profession.

We feel quite sure that we have not overstated the requirements a dentist should possess. We have said he should be logical, as we believe a logical man who is able to reason from cause and effect is much better prepared to perform the various operations successfully and with good judgment than one not possessed of a logical mind. We have said he should be a physician. We should regard a dentist deficient if he were not able to prescribe hygienically for his patients with as much intelligence as the average practitioner of medicine. Not that we wish to under estimate the ability of the average practitioner of medicine, but we wish the dentist to have intelligence enough to understand the diseases of the mouth and the causes of such, and also to be able to prescribe a preventive treatment in connection with the more technical processes of filling the teeth, and to do this requires a good degree of hygienic knowledge.

We have said that a dentist should be a good judge of human nature and be able to control his various patients with their different peculiarities, and this requires more than average intelligence. Much, however, can be acquired by practice and study of the subject. Especially is this true with children. This important faculty is so closely related to the various qualifications touched upon in other parts of this paper that its advantages can readily be seen. For instance, if the operator is able to control an unruly and ungoverned child successfully, this qualification is soon made known to the parents who may have failed in their efforts to have their child's teeth properly cared for. If he shows a

good degree of intelligence as to preventive treatment, this fact is soon made known to the friends of those whom he may be serving. If he successfully takes care of a nervous, hysterical woman, she never forsakes him. If an invalid, who by chance has been less favorably treated in other hands, is handled with skill and care, he is more willing to compensate the operator.

Let us consider the office and its equipments. Selecting an office requires much care and good judgment. The important items to be taken into consideration are: First, good light, a supply of water, and toilet conveniences. Second, the location, which should be such as to enable those who do not possess their own carriage, to reach the office by public conveyance without too much walking. Whether in a public building or a private house the approach should be such as to denote thrift. A long ascent of stairs is always objectionable, but in large cities the general use of elevators does away with this objection. In small towns the securing of a suitable office is often a difficult and sometimes a well-nigh impossible task.

The office and its furnishings should be selected not only with a view to the needs of the occupant but also to his financial ability. As a rule a dentist's necessary expenses are out of proportion to his income, and his actual expenses are absurdly large compared with what he earns; hence it naturally follows that large numbers of practitioners begin their professional career with a debt, the years come and go and find them always in debt, until at last the end comes, the struggle is over, and their families are left with only a legacy of debt. As well might a man attempt to run a race with a millstone around his neck as to start out in professional life relying upon credit. To be embarrassed with obligations that one cannot meet takes all the courage and vim out of a man; inability to pay leads to excuses, excuses too often lead to falsification; and before he knows it, the man has lost his own self-respect and the respect of others.

To possess an office furnished with desirable appointments should be the laudable ambition of every practitioner, but it is not a necessity and should be foregone until it can be afforded. Absolute neatness and cleanliness are indispensable, both in the operator and in every appointment of his office. Nothing will sooner prejudice a patient than even a suspicion of a lack in this respect. If cash is limited, invest what money you have at your



command in your implements for work, even if it necessitates simplicity in your office furniture almost to bareness.

We will give a little in detail as to what are the requirements in the way of implements, tools, and instruments to enable the dentist to render good service. An operating chair; a cuspidor, which can be easily removed and cleaned; a bracket and tray; and a place in which to keep instruments where they can be arranged in order, and where the operator can lay his hand on anything needed without too much searching. As to quality of chair—the writer, in the beginning of his practice, filled teeth with gold with the patient in a rocking chair, on a platform made of dry goods boxes, and the tray which held the gold, instruments and annealing lamp rested in the patient's lap. This occurred in towns adjoining his regular location, in which there were no dentists, and is only mentioned here to show what can be done in a case of necessity. It served his purpose for the time, and was the means of getting these patients to come for work afterwards to his regular office, which was, of course, better equipped.

Dentists often purchase many useless implements. A reasonably complete set of pluggers can be selected, with not over 18 in number, and a few odd shapes added; more than this number are seldom used, but the extras which are never used often amount to many times more than those that are used. There is at this time a rage for electric motors for dental engines; these are expensive luxuries and from an extensive experience with them we feel warranted in saying that a treadle engine answers every purpose, especially as electric apparatuses are generally only experimental as yet.

The number of shapes and sizes of burs is altogether too great—there are nine different shapes and each runs in size from No. 8 to No. 000, making in all of different sizes and shapes more than 100. When these are placed in a holder it is very confusing to select just the one that will best serve the purpose and so is a waste of time. If every alternate size from No. 8 down was omitted, reducing the number of burs one-half, it would be a great advantage to the operator, and we could well discard all but four of the shapes. As a matter of actual utility the round bur will do nearly all that is required in the preparation of cavities for filling; occasionally a small wheel is useful. For our purposes the round bur generally and sometimes a wheel are all we require

in the preparation of cavities. We predict that when it is fully understood what can be accomplished with the improved form of blades in the round bur, but few of the other shapes will be used. When studying economy these few details at least show *where less money is required in the necessary outlay.*

Next, you must be able to impress your patient with the feeling that you are thorough, careful and skillful, and there is but one way to so impress them, and that is by being thorough, careful and skillful. Never let an operation leave your hand until it is as perfect as you can make it. Start out with this determination and it will be of more importance to you than the most elegantly appointed office. But after having done your work to the best of your ability comes the problem of how to make your patients value the services which have been rendered, sufficiently, to be willing to pay for them. This question and some of the most advantageous methods of operating will be considered in the succeeding article.

[TO BE CONTINUED.]

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## A NEW METHOD OF APPLYING FORCE IN THE REGULATION OF TEETH.

BY EDWARD H. ANGLE, D. D. S., MINNEAPOLIS, MINN.

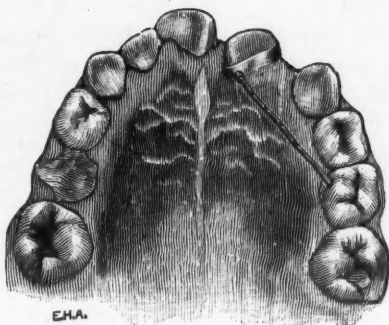
For a long time I have been experimenting with a novel way of exerting force to a moving tooth and so well pleased am I with the results that I am convinced the plan is destined to occupy a permanent place in Orthodontia.

The power is derived by the lengthening of wire resulting from pinching or compressing its bulk laterally between suitably formed beaks of strong pliers.

In order that the reader may become familiar with this method of exerting pressure in the movement of teeth a few cases from practice will illustrate a few of the many modifications to which it is susceptible.

Fig. 1 shows an inlocked incisor being moved outward. A rod of metal of suitable length to extend from the anchor tooth and bear against the moving incisor, is held in position by one end being made to rest in a pit formed in the enamel of a deciduous second molar, which has been selected as the anchor tooth.

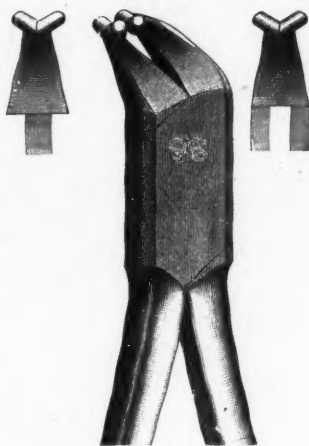
The other end of the wire is secured in a section of tubing soldered to an accurately fitting band cemented upon the incisor.



*Fig. 1.*

Force is exerted upon the moving tooth by occasionally pinching the wire with the Regulating Pliers shown in Fig. 2.

Each pinch of the wire causes it to be lengthened about one one-hundredths of an inch. The shaded depression in the wire

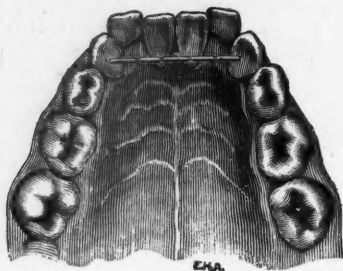


*Fig. 2.*

well shown in the engraving illustrates the pinches made by the pliers. Two or three pinches each day or alternate day will be found sufficient to rapidly move the tooth into its desired position. In the case here shown the movement of rotation as well as out-

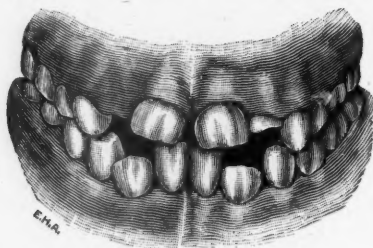
ward being necessary the force was directed against one side of the tooth, thereby accomplishing both movements at the same time.

After the tooth had been moved into the desired position, it was retained for a few days by the appliance shown, after which the appliance was removed and the further retention of the tooth effected by the proper occlusion of the opposing inferior incisors.



*Fig. 3.*

Fig. 3\* shows another case in which a modification of the same plan was used in moving outward two inferior deciduous cuspids which were becoming bunched as the result of lateral pressure. Pits were drilled through the enamel on the lingual surfaces of the cuspids into which was made to rest the ends of the wire to

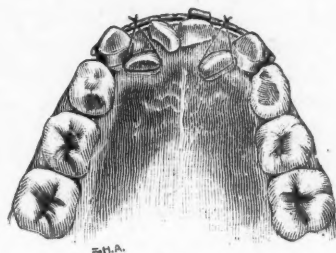


*Fig. 4.*

be lengthened. In this case it was not only necessary to move outward the inferior cuspids, in order to provide space for the inferior incisors, but also to move outward the superior deciduous cuspids that space might be provided for the incoming superior incisors. This was accomplished by their occlusion with the

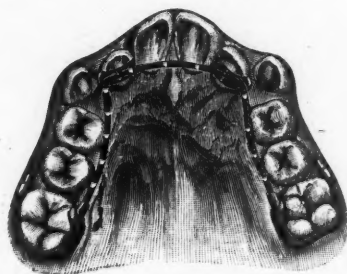
\*From the Fourth Edition of the Angle System of treating Dental Irregularities and Fractures of the Maxillæ, now in press. S. S. White Dental Manufacturing Co., publishers.

inferior cuspids as shown in Fig. 4 as the wire was gradually lengthened by pinches from the regulating pliers. As all four cuspids. were being moved outward it was necessary that the process should be most gradual, hence the wire was lengthened but once a week. After sufficient space had been secured it was maintained by the lengthened wire already in position until all the incisors had become fully erupted and firmly established in their normal positions.



*Fig. 5.*

Fig. 5 shows a modification of the above plan in a similar case in which the ends of the wire to be lengthened were soldered to the labial surfaces of accurately fitting bands cemented upon the deciduous cuspids. As the cuspids were gradually moved further apart the incisors were moved outward by wire ligatures occasionally tightened by twisting the ends which should always be left one-eighth of an inch long and bent not to interfere with the lip.



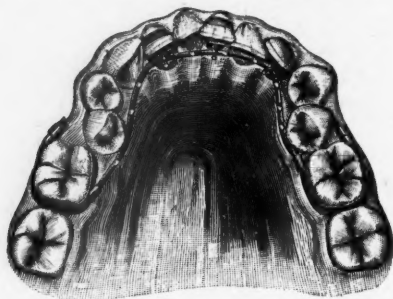
*Fig. 6.*

Fig. 6 shows the application of this method in treatment of a very common form of Dental Irregularity, in which it is desirable to exert pressure outward upon the bicuspids as well as forward

and outward upon the lateral incisors in order to provide space in the arch for the erupting cuspids. The first molars were selected as the anchor teeth and encircled by the adjustable clamp bands to which were soldered sections of tubing which served as sockets into which rested the ends of the wire to be lengthened. This wire was bent to conform to the inner circle of the dental arch and was held in position by its anterior part, resting in staples, soldered to the lingual surfaces of bands accurately fitted and cemented upon the lateral incisors. The united ends of the bands were left about one sixteenth of an inch in length against which rested the sharp curves of the wire.

By pinching the wire with the regulating pliers in the region of the bicuspid the incisors were moved forward, while pinching the wire between the laterals forced the laterals farther apart, thus providing space for the central incisors. The bicuspid was gradually moved outward by the wire resting in contact with their lingual surfaces; pressure being exerted by forcing the wire against them with each pinch of the pliers.

The reader will be surprised to know how much lateral pressure may be brought to bear upon the bicuspid, or in all similar cases by forcing the wire against the teeth just at the instant it is being pinched but in cases where extensive lateral pressure is necessary, as in the following case, a piece of rubber stretched between tooth and wire will be very effectual. After the rubber has moved the tooth it should be removed and the wire bent outward against the tooth when the rubber may again be applied if necessary.



*Fig. 7.*

After the teeth had been moved into the desired position they were retained by the device already described for their movement,



which will be found nearly the ideal retaining appliance in all similar cases, as it is so cleanly, compact and efficient—is not under the control of the patient and can be worn any length of time without inconvenience.

Fig. 7 represents a case in which a bunched and overlapped condition of all the lower teeth anterior to the molars existed, necessitating a general enlargement of the arch in the region of these teeth, which was accomplished after the methods already described and the device so clearly shown in the engraving, which was also used as a retainer after the teeth had been moved outward.

It is not to be supposed that this method will supersede the use of the jack-screws although in many cases it will be found more desirable as it is so extremely simple and compact. Its greatest place of usefulness will be found in the movement of the teeth of young children, where great force is necessary and the smallest of appliances desirable.

The wire for lengthening may be made of platinized gold, silver, brass, or what is much better than all a fine quality of German silver, which takes the desirable degree of temper at the point of pinching, so that the wire maintains the same stiffness as if the depressions by pinches had not been made.

The most desirable size, as well as materials, is found in the author's appliances for regulating the teeth and is known as the anchor and retaining wire G.

The Regulating Pliers shown in Fig. 2, are beautifully adapted to the work for which they are intended and are so shaped as to reach all parts of the mouth. They should never be used in pinching large or hard wire or they will be injured so that evenness and accuracy, so necessary, will be impossible.

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## THE INDEX MEDICUS.

### SPECIAL NOTICE.

This valuable epitomizer of all medical, dental and scientific work is about to be discontinued from lack of support. The nature of the work is such that it cannot depend on popular support for existence; the price, ten dollars a year, may seem considerable. Every dental library belonging to a dental society ought to be a subscriber and every writer who wishes to be accurate should be also. It is said that five hundred additional subscribers are needed to pay the cost of publication. Will you be one of them? Will you interest your society? Geo. S. Davis is the publisher, Detroit, Michigan.

## Reports of Societies.

### THE AMERICAN DENTAL SOCIETY OF EUROPE.

THE nineteenth Annual Meeting of the Society at Geneva, Switzerland, Aug. 6, 7 and 8, was not as large as some previous meetings, but the interest was well sustained throughout. The sessions were held in the Athenée, where the picture-clad walls of an assembly room, not too large for the gathering, gave an air of club-room comfort which contributed not a little to the feeling of comradeship that dominated the occasion.

President BRYAN rallied to order at eight o'clock on Monday, and at the close of the business session delivered the Annual Address, a portion of which is here given.

#### ADDRESS OF THE PRESIDENT.

DR. LYMAN C. BRYAN, BASEL.

#### *Fellow Officers and Members of the American Dental Society of Europe:*

Just twenty years ago, on July 2, 1874, the first regular Annual Meeting of this Society was held in Geneva under the Presidency of Dr. Charles T. Terry, then of Zurich—the society having been organized on the Rigi Mount, July 4, 1893, and a semi-annual meeting having been held in Basel in November of that year, and invitations sent out to all American dentists practicing in Europe.

The Society, organized by the five Americans then practicing in Switzerland, grew rapidly, and soon numbered within its membership the most of the prominent dentists of Europe and is still the only general European association of American dentists. Our membership of seventy-five extends from Sweden to Italy and America, and includes the active members, one or more in each large city of Europe, and our honorary list, on which we have placed our distinguished American brethren who have occasionally met with us, and others whose services to dental science and art demand special recognition.

On this honorary list we have also placed those of our own membership who have done yeomen's work for the Society and the public in the past years and have again returned to the land they love, either to enjoy the fruits of their labor or give their

riper years of experience to their fellow countrymen, and spend their prime of life and declining years in the midst of the people speaking their own language, and in that fellowship which one feels for those of kindred nationality from whom one has been separated for years by the varying currents of the great ocean of life.

Some of those early workers in the then virgin dental fields of old Europe are still plying their calling among us with steady hand and sturdy wills, and are among our most able and respected members, and some have sons, who are active in the struggle for existence and eminence, who are taking as active an interest in their father's practice as did their elders twenty years ago.

May the Terrys and Fields of the second generation honor the profession as their fathers have, and may they show as much energy when the gray hairs mingle with their raven locks as Dr. Field, who, after many years of honorary membership, now comes forward with his application for active membership.

I have here a letter from Dr. Wright, now of Cincinnati, one of the founders of the Society, who, after twelve years of absence, writes us with a young and buoyant spirit to tell us his heart beats warm for the friends of his youthful years in the profession, and for the Society. We regret that so few of those old time friends of his are with us today to receive his kindly message. It will do us all good, however to hear such pleasant words from one whom so few of us knew personally, but of whom we have heard so much to endear him to us.

(Extracts from Dr. Wright's letter.)

"When I saw the notice in one of the American periodicals that the 'Society will hold its annual meeting in Geneva, Aug. 6, 7, and 8, 1894,' memory waked up and began throwing out beautiful stereopticon views of the meeting twenty years ago. On July 4th, 1873, a few Americans practicing in Switzerland had met on the Rigi, to 'celebrate' and to discuss the question of founding a dental society. In fact, they gave birth to a baby-society. Terry, Williams, Field, Van Marter and Wright were the 'mothers.' A few months later the baby was christened in Basel in the office of Van Marter and Wright, where ten or twelve earnest Americans met and began work. The next meeting was at Geneva, July 2, 1874, in the Hotel de la Paix. At that meeting Abbot with his staff of friends, Dumont, Paetsch, N. S. Jenkins, Young and others, first gave countenance

to the young Society. Dr. Gregory, of Lyons, looking like a portrait of George Washington, first mixed his wine with quaint wit and wisdom at the social board at Geneva, that year. Dr. Abbot was elected President, and Paris was selected as the place for the next meeting. You can easily believe that such a combination, Abbot and Paris, tended to the permanent establishment of the Society.

At Interlaken wonderful legal talent was displayed by dear departed Kingsley, and a new organization was effected \* \* \* The name of the Society was sneered at by English and German writers, and some of our own members were influenced to propose a change. We were to be 'A society of Americans practising in Europe,' etc.; but not to assume the proud name of The A. D. S. E., but after a fight over it at Homburg, the old name was preserved, and is today honored by all. \* \* \* Miller came into the Society at Interlaken, I believe; at any rate, wherever he made his first appearance, he was found with his pockets full of experiments. He showed himself even then as a 'fact-hunter,' and facts were as difficult to get then as now.

We were once called 'expatriated dentists' by a caustic English writer, but when we met as the American Dental Society of Europe, patriotism made America of Geneva or Paris or Deutschland. Yankeeland from Maine to Texas, from New York to San Francisco, was for the time transplanted to Europe. \* \* \*

To be an ex-President is to me the most highly appreciated title and honor that has ever fallen to my lot, and I esteem it a privilege to offer these reminiscences. It is the time of the Rip Van Winkle sleep in the Catskill mountains, and I am afraid that the old boys are grayer than they were and wear glasses at the chair, but I know from my own pulsations that their hearts are still young. Long life to them and to the Society they love so well.

Yours fraternally, C. M. WRIGHT."

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#### MONDAY AFTERNOON.

DR. MONK, Wiesbaden, presented, in behalf of a colleague, models of the malformed mouth of a child of ten years, whose head had been crushed at birth, and desired the opinion of members as to the best mode of treatment. The front teeth failed of occlusion by the space of three-eighths of an inch, and the condyles

were abnormally short. Some effort had already been made to better the condition by elastic bands upon the lower jaw.

DR. ROYCE, Tunbridge-Wells: "It seems to be a case of arrested development of the anterior portion of both the upper and lower maxillary bones."

DR. WM. MITCHELL, London: "The deformity has been augmented by the protrusion of the tongue, increasing the space already existing between upper and lower incisors. The patient being quite young, the yielding condition of the bones may be taken advantage of by capping the permanent molars—the upper preferably,—and using these teeth as a fulcrum bringing pressure upon the chin by means of a cap over the head. To prevent the protrusion of the tongue a plate could be arranged with a *cul de sac* (to be worn constantly except at meal times), so that it could not pass between the teeth. The fulcrum could be made in connection with this plate, if deemed advisable. What is best in such a case could only be decided after trial of different methods."

A member: "It would be advisable to extract the temporary molars."

DR. LUCE, Stuttgart: "The paper that I have prepared has reference to a case having features similar to this."

PRESIDENT BRYAN: "It will be most helpful, then, to read it now."

#### A REGULATING CASE IN PRACTICE.

BY CHAS. E. LUCE, D.D.S. STUTTGART.

I am led to present this case, as I think it unique and may possess some points of interest.

Carl v. H. aged 20 years, of most respectable parentage, presented himself for treatment, the mouth showing the following abnormal conditions: the roots of the first and second molars, both superior and inferior, were still in position and abscessed; there was well pronounced necrosis on both sides of the lower jaw in the neighborhood of the first molars, apparent by the copious flow of pus upon pressure, and blue tense gum. The inferior wisdom teeth were just erupting; the bicuspid, both superior and inferior were in good condition, but articulated poorly, the cuspids were of good quality but showed Hutchinson-like pointed cusps; the superior laterals were well shaped and of good quality, the superior centrals were undoubtedly Hutchinson teeth, as the young man related that formerly the lower half of the teeth was much thinner

and notched, that at an early age cavities formed and extended through the teeth and eventually this part broke away, leaving the short crowns as presented; the part remaining was three-sixteenths of one inch in length, with the dentine showing at the fractured edge, soft and sensitive. The inferior incisors were also teeth of the same type, with blade-like cutting edges; the two centrals were badly placed, their distal surfaces presenting toward the front and the teeth at the cutting edges were at least one-fourth inch apart.



*Fig. 1.*

The only articulation and this of no practical value was that of the second bicuspid; the opening between the incisor teeth was three-eighths inch and the tongue, which had become abnormally large, was in a constant state of irritation from contact with the irregular surfaces of the teeth forming the opening; the lips were abnormally thick and muscular, caused by constant effort in grasping the food, in fact, the lips and tongue comprised about all the means the young man had for preparing the food for his stomach.

The patient was melancholic, and suffered much from a faulty digestion.

As it was deemed inadvisable to administer an anæsthetic, the diseased roots were removed with the local use of cocaine, 5 per



cent. being used, the patient previously having had two hypodermic injections of morphine; with the exception of the necrosed parts the mouth healed quickly, and they yielded eventually to the treatment with aromatic sulphuric acid and antiseptic mouth washes. Two months later the mouth presented a healthy appearance, the breath had lost its fetid odor and the general health was improved. Taking up the regulating of the teeth, it seemed of the utmost importance to broaden the superior arch and allow the bicuspsids to articulate properly, in which event I hoped that the distance between the superior and inferior anterior teeth would be considerably lessened, the arch was broadened  $\frac{1}{8}$  inch by means of piano-wire, the bicuspsids carrying caps which conveyed the pressure, but the opening at the front was not diminished as much as I had hoped.

The inferior centrals were rotated and brought into position by means of spring wire attached to the teeth by gold bands and sprung around the second bicuspid on either side and tied with linen thread to prevent slipping, the rotating was quickly accomplished and the four inferior incisors were secured by gold bands soldered together at their approximal surfaces and cemented to the teeth.

The treatment of the superior central incisors was difficult and tedious, they were exquisitely sensitive and I was only able to devitalize the pulps by first applying a tiny particle of arsenic, in combination with creosote and oil of cloves, to the sensitive dentine and at the next sitting getting a little deeper and so on for some six sittings until I reached the pulp itself; the pulps were eventually removed, the canals filled with gutta-percha points in combination with cajuput oil and iodoform, and after cutting nearly down to the gums; Richmond crowns were inserted of a sufficient length to nearly articulate with the inferior incisors, gold dentures were made, supplying the missing molars, and half-round gold wires, attached to either plate at the second molar tooth were passed around in front of all the teeth, both superior and inferior, to counteract the outward pressure of the tongue. The inferior wire has also served to draw in and elevate the inferior incisors until now the antagonism is fairly good.

One interesting phase of the case was the drawing down of the superior lateral, after the completion of the crowns, that is the centrals; the laterals were ludicrously short. Gold bands,

carrying vertical tubes, were cemented to both teeth and a spring wire, suitably formed, spanned from one lateral to the other, the ends of the wire resting in the tubes, a double hook was prepared from 16-carat gold plate, one hook passing around the wire and the other hooked end being made broader was sprung over the cutting edges of the centrals. It is evident that there would be constant downward tension upon the two laterals, the teeth were brought downward to a considerable extent, but unfortunately the young man was absent from town for a few weeks, and when I next saw him the wire had been removed and the teeth had receded somewhat; at present the laterals are still too short; yet in the mouth they do not look badly and by comparing the two models it will be seen that a good deal has been accomplished.



Fig. 2.

I am of the opinion that the abnormal condition of things in this young man's mouth occurred in the following manner: At the age of thirteen the first molars were entirely broken down, only the roots remaining *in situ*; the second molars were carious, with their pulps exposed and aching with every effort of mastication; the breaking away of the superior central crowns made

an opening into which the tongue readily found entrance, this opening, being at the beginning narrow, naturally the inferior maxillary would be depressed sufficiently to afford a comfortable space for the tongue; this was the usual position of the tongue, always held between the anterior teeth and protruding between the lips, except when they were closed by conscious effort, not a very prepossessing appearance, as one can well imagine.

By day, or during sleep, the muscles of mastication were imparting pressure upon the tongue through the twelve anterior teeth, which naturally, in the process of time, moved them outward and served to shorten them as well by direct pressure into the socket, this would occur at a favorable age for such movement, and the lack of articulation between the bicuspid, which occurred while the tongue was held between the anterior teeth, would eventually allow them (the bicuspid) to lengthen, therefore we find the identical condition as presented.

As is well known, the unexpected and inexplicable often occur in regulating operations. I must admit that the articulation of the anterior teeth has been improved much more than the efforts directed to that end would seem to indicate; it is possible that the insertion of the two Richmond crowns upon the superior central roots, may have precluded the placing of the tongue between the teeth effectually and in conjunction with the bands which have served to draw the teeth inward, the inferior teeth have, as it were, "risen to the occasion."

DR. MITCHELL: "Teeth can often be elongated by the application of small, round, not flat, rubber bands. The ring must not irritate the gum. Tie to a piece of silk."

DR. HUGENSCHMIDT, Paris: "Last spring I had a young lady aged 16, who presented herself with a separation of thirty millimeters between the biting edges of her incisors. I made a plate to enlarge the arch, and after six weeks treatment the separation was reduced to eight millimeters, at which time the treatment was discontinued, as the patient had to leave the city."

DR. ROYCE then read the following paper:

#### ON THE ETIOLOGY OF DEFECTIVE ENAMEL.

By W. E. ROYCE, D. D. S., Tunbridge Wells.

The defects referred to in the above heading are those usually known as congenital, and vary in extent from the slightest pit, to nearly the entire absence of the enamel.

I need not take your time to fully describe these teeth; such able articles as those of Dr. Frank Abbott in the August number, 1891, of the *Dental Cosmos*, and of Dr. Otto Zsigmondy in the September number, 1893, of the same journal, have done much to make their microscopical appearance known; while we are all far too familiar with them microscopically.

While it cannot be denied that some of these lesions are due to pre-natal influences, still I have come to believe that a very great majority of them are caused subsequent to birth.

A hasty review of the most important points in the development of the teeth may help us better to understand how and when these defects may be caused.

We know that a fold of the mucous membrane of the mouth dips down into the jaw, and forms a cap-like structure which becomes the enamel organ, and that the papilla—which afterward becomes the dental pulp—is developed from the connective tissue below. That upon the outer surface of the pulp, are found the odontoblasts to form the dentine, while upon the inner surface of the cap-like enamel organ are the ameloblasts, starting from a common point, work from each other, the one forming dentine, the other enamel—the dentine being formed slightly in advance of the enamel.

Now it is highly probable, that this process of development is often interrupted, or that it proceeds more rapidly at some times, than at others; but so long as this interruption acts alike upon the odontoblasts and the ameloblasts, no deformity in the tooth will result. On the other hand, any cause which interrupts the action of the ameloblasts, while the action of the odontoblasts is still continued, will cause a defect in the enamel, in direct proportion to the length of the time such cause continues.

Reference to Professor Peirce's chart\* shows us, that at birth the enamel has already begun to develop upon the cusps of the six-year-old molars, and that at one year it is well advanced.

I wish to call especial attention to this fact because these are the teeth most often affected. It is rare to find any of the teeth pitted, without the six-year-old molars being also involved. Most often there is in the young tooth a deposit of enamel upon each cusp, while the rest of the grinding surface, and more or less of

\*Fig. 1. Calcification of the Deciduous teeth. Copy of Prof. Peirce's chart, page 636 Vol. III. American System of Dentistry. Fig. 2. Calcification of the Permanent teeth, page 644 Vol III. Ibid. [Cuts omitted. Ed.]

the sides are denuded. This deposit of enamel upon the cusp is often lost, and the grinding surface becomes concave in later years.

There is another point worthy of notice in this connection; namely, the cord of the six-year molar is usually developed directly from the mucous membrane of the mouth, while the cords of the anterior teeth arise from the cords of the corresponding temporary teeth.

The enamel organ of the first molar, therefore, would seem to be in more direct relation to the mucous membrane of the mouth than that of any other permanent tooth. We may therefore arrive at this conclusion,—The influence which causes this trouble is one which acts upon the enamel organ much more than it does upon the pulp, and that usually this action is commenced during the first year after birth.

When we consider how very few children suffer from acute exanthems during the first year of their lives, we realize what a small proportion of cases of pitted teeth can be attributed to that cause, even though we admit that exanthems can produce it.

Again, there is no reason to believe that exanthems, and many other diseases which are popularly supposed to produce this trouble, do not affect the pulp equally with the enamel organ, and so possibly produce other defects, but not this one.

Remembering that the enamel organ is formed from the epithelium of the mouth, and that during its creative period it remains in close relation to it, it seems safe to say that whatever affects the mucous membrane, is likely to produce a similar effect upon the enamel organ. If the enamel organ is inflamed it cannot do its work. If the mucous membrane is inflamed it is most natural to suppose that the enamel organ will suffer with it. Broadly speaking then, we may repeat what Mr. Jonathan Hutchinson told us twenty years ago—that stomatitis is the cause of defective enamel. We may go further with him, and say that while it is not always the case, in a very great majority of cases stomatitis is caused by mercury. I believe we may go even further and attribute to hereditary mercurialization what Hutchinson attributes to hereditary syphilis. The fact that these teeth are much more common in England than in America, first attracted my attention to them, and in my own mind I associated them with the free use of mercury long before I knew that Hutchinson had written upon the subject. Having, after years of observation, come to this belief, I

undertook to test my theory by experiments. The experiments in regard to the hereditary effect of mercury are not yet completed; at a later day I hope to place the results before you. Those relating to its direct action were I think, sufficiently successful to justify my presenting them.

I took for the experiment a litter of two weeks old healthy puppies. One was treated with one-half grain doses of calomel, another with one grain doses of Grey Powder (*Hydrargyrum cum Creta*) daily, while a third was not treated. The drug was discontinued whenever the dogs showed the slightest ill effects. This treatment was continued till they were two months old. I con-



Fig. 3. Skull of dog treated with calomel.

sidered it essential that I present the skulls of the three dogs, treated and not treated, as I have said.

The originality and ingenuity those puppies showed in getting killed is almost beyond belief. Time after time I started the experiment; time after time some new method of suicide was discovered. At last I thought success was within reach; but alas for such hopes! Just as the permanent teeth were beginning to erupt, the puppy that had not been treated, at the same moment clogged the wheel of a bicycle and of science—and I have but two skulls to show.



The smaller one was treated with calomel, and its effect upon the teeth is very manifest. (Fig. 3.) I now think that smaller doses of calomel would have produced as great, or even greater

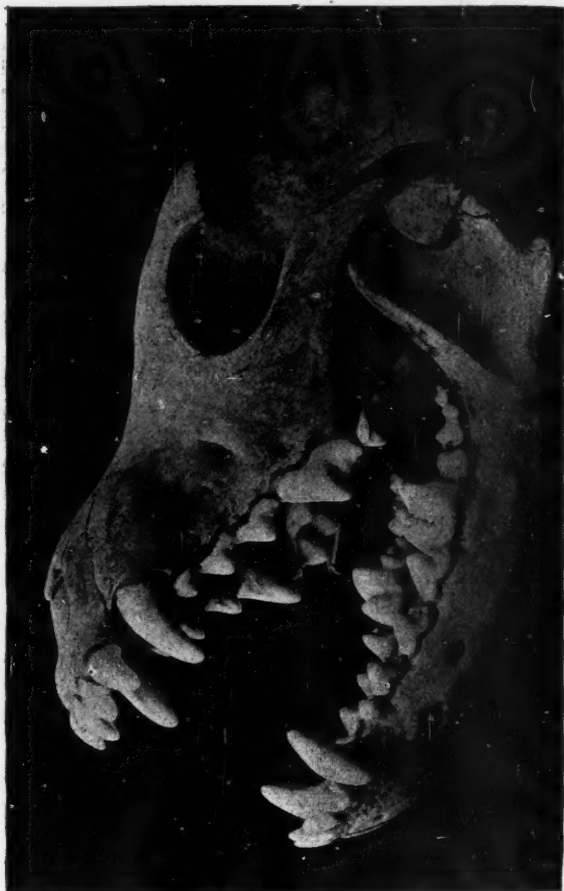


Fig. 4. Skull of dog treated with Grey Powder.

results. The larger one was treated with Grey Powder, and there is no apparent effect of such treatment upon the teeth. (Fig. 4.)\* Nevertheless, I believe that Grey Powder is accountable for many of these defects. This is my reason—Mercury has two actions, local

\*Since writing my paper I have found a pit on each of the superior second molars.

and constitutional. The local action—such as the action of calomel upon the bowel and liver—we need not take time to discuss. Mercurial stomatitis is produced by its constitutional action, and we have the best of authority for saying that the constitutional effects of mercury are identical, however exhibited.

Dr. J. Mitchell Bruce says: "In the stomach mercurials combine with the chloride of sodium of the secretions, and, whatever their original form, are converted into a double chloride of sodium and mercury, which further unites with the albuminous juices to form a complex molecule of mercury, sodium, chlorine and albumen. This compound although precipitated at first, is soluble in an excess either of chloride of sodium, or of albumen; exists in the stomach, therefore in solution; and is readily diffusible and easily absorbed."

Again, he says: "Mercury quickly leaves the blood and enters the tissues, where it is apt to remain almost indefinitely, being excreted with comparative slowness, especially when the kidneys are diseased. It has been found in every organ of the body, most abundantly in the liver."

As the quantity of chloride of sodium contained in the stomach is limited, we can easily understand how mercuric salts are more easily absorbed than mercurous salts, while metallic mercury would be absorbed still more slowly. We also understand why large doses of calomel or mercury produce no more effect than small ones. One-half grain of calomel given in six doses of one-twelfth grain, will produce more effect than six grains given as a single dose. This fact is most important, as children are, for safety's sake, given small doses.

Idiosyncrasy would render some children peculiarly susceptible to this drug.

Many apparently hereditary effects can also be accounted for by the use of mercury. Several children of the same family, or mother and child, have defective enamel. Inquiry usually reveals the fact that they have been treated by the same doctor, or attended by the same nurse, and like causes have produced like effects in each case.

We cannot, however, ignore the fact that there are cases of imperfectly formed enamel, where the cause must have existed before birth.

The casts which I present show characteristic mercurial teeth, according to Hutchinson. (Figs. 5 and 6 and 8.) As the teeth are temporary the stomatitis must have occurred about ten weeks before birth.



Fig. 5.  
Figs. 5 and 6. Pitted temporary molars.  
Fig. 7. Same mouth with some of the permanent molars erupted. The central incisors have small Hutchinson notches.

Whether mercury was administered to the mother at that time or whether it had been administered to one of the parents years

before and had been stored in the system, I have been unable to ascertain. Some of the permanent teeth of the patient have now erupted (Fig. 7), and they are not only defective in enamel, but the central incisors have small Hutchinson notches. The elder brother of the patient has mercurial teeth, while the teeth of two sisters, born between the brothers, are normal.

We have been in the habit, in these cases, of laying the trouble to hereditary syphilis. Why, necessarily, syphilis?

I think it has been proven beyond doubt that mercury administered to a child while the enamel is being formed, may interrupt its development. Is it not more natural to suppose that the effects of mercury may be transmitted than that quite another



Fig. 8. Pitted temporary molars, presented by Dr. Mitchell.

cause should be transmitted, and produce identical results? Hutchinson says that the six-year molars are the "test teeth for mercury." I have never seen Hutchinson notches unless they were accompanied by mercurial molars, as in the casts shown. (Fig. 9.) In fact Hutchinson speaks of the frequency of their association. It would throw much light upon this point if we were able to examine the teeth of a people where syphilis is prevalent, and where mercury is not used as a remedy. The only thing I have been able to find—which would seem to bear upon this point—is from M. Magitot. He does not think that the notch is characteristic, and says "that it is not found in some races frequently afflicted by syphilis, such as the Japanese and Peruvians."

I am aware that the question of heredity is a deep one, and that I must be prepared to grant that acquired characteristics are not transmitted. The most advanced biologists, however, admit that poisons are transmitted, and I only argue that the poisonous effects of mercury, given to combat syphilis, or for any other cause, as well as the effects of syphilis, may be transmitted.

The body of the parent may be maimed, generation after generation, as by circumcision, without producing the slightest change in the offspring; but when the trouble is constitutional, and the germinal cells derive their nourishment from blood rendered impure—either by poisons dissolved in it, or by microbes floating in it—such mal-nutrition will influence the well-being of the germinal



Fig. 9. Hutchinson notches associated with mercurial molars.

cells. Nor need this influence cease with the expulsion of the poison, or microbes, from the parental blood. Children born of parents who have suffered from syphilis show signs of the action of the microbe upon the germ cell, although the microbe had disappeared long before the birth of the child.

It is admitted that the effects of alcoholic poisoning are transmitted, and high authorities believe that such transmission is by the direct action of the poison upon the germinal cells.

Dr. Thompson in the American System of Dentistry says: "Amongst the mercury-mines of Idria diseases are induced which cannot be distinguished from the venereal, and children born of these people are scrofulous."

I have no wish to undervalue the use of mercury, in certain cases. At the same time, it should be administered to adults with

a full knowledge of its possible ill-effects, while its administration to children, except in most extreme cases, should receive our most emphatic protest.

#### DISCUSSION.

DR. WM. MITCHELL, London: "I cannot thank the author too much for the concise and interesting manner in which he has presented the subject. The paper is a crystallization of easily comprehensible ideas. The essayist, as I have occasion to know, has bestowed the greatest care and thought upon the subject under circumstances of the most painful personal affliction. We have here, not a theory formed and everything done by way of argument or circumstances brought in to fit the theory; we have no synthetic manipulation of elements to produce a compound substance; no loose laboratory experiments introduced to fit a previously formed theory; but we have *vital force* and *natural processes* playing their parts in connection with the investigations. These factors are often conspicuously ignored, even by noted investigators. Here we have irrefutable and eloquent testimony of the specimens themselves; we see the effect of mercury upon dentition.

Dr. Royce's investigations are in a comparatively incipient stage; they lead to the inquiry: Has the impress of mercurialization upon either parent prior to conception any effect upon the child? Judging from the specimens and the text of the paper, it has not. Yet constitutional taints are transmissible, and as alterations, modifications, and perversions of nutritive processes can be brought about by drugs as well as by surroundings, it is quite within the range of possibilities that this potent and specific action of mercury as commonly prescribed may now receive the serious attention of the medical profession and lead the practitioners to lighten our labors by curtailing its use. I sincerely hope that Dr. Royce may continue his investigations and that they may be taken up by others."

A MEMBER: "It is to be remarked that the subjects in Dr. Royce's experiments have been dosed with mercury continuously while the human patient is under mercurial treatment for a short time only."

DR. ROYCE: "The dogs were subjected to mercurial treatment for two months only, but a great many teeth had erupted during that period. Dogs' teeth erupt very quickly."



DR. HUGENSCHMIDT: "Dr. Royce deserves to be highly congratulated for the experiments which he has undertaken for the purpose of elucidating some of the dark phenomena which underlie the etiology of dental erosion. He presents us today but one conclusive experiment, it is true, but this is the experimental outcome of an hypothesis clearly conceived in his own mind; namely, the action of mercury on the developing enamel organ. Whether the mercury has been taken during the developing stage of the tooth, or the organism influenced by the drug, by heredity, or through the mother before the development of the portion of enamel acted upon, mercury is suggested as the cause of the mischief. I am personally much interested in the facts brought forward. Our colleague ought to be strongly encouraged to pursue his researches and present to us an additional number of conclusive experiments.

I would like to say, however, that I do not believe mercury to be as frequent a cause of erosion as Dr. Royce thinks, although I am convinced that the action of a general alterative remedy, such as mercury, must have some influence on the development of the different tissues and organs, (including the enamel, of course,) when given at an early stage to the child. In the skull presented to us we must remark that the erosion is a particular one. The whole surface of the enamel has been eroded from the tip to the base of the tooth, every tooth being involved to the same degree. This is not the case in the human subject, except in very rare circumstances. It indicates a very great disturbance at the period of tooth development. Mercury must certainly interfere at that period with the harmony which presides over the development of the whole organism, and therefore we must be prepared to find disturbances in other parts of the body. This field belongs to the general practitioner, but if Dr. Royce's future experiments confirm the one he has presented to us today, he will have rendered an immense service to medical science in preventing the abuse of mercury.

For myself, I still cling, in the majority of cases, to the influence of the auto-organic poisons on the developing organisms; to those which are formed in the course of eruptive fevers, of convulsions or hysterical infantile states, infantile diarrhoea, mal-nutrition and other allied states, which, in depressing the organism, render it

less capable of fighting through its phagocytes against external and internal enemies.

As to the influence of mercurial stomatitis on the developing enamel, mercury will produce stomatitis only in a dirty mouth, but never in one in which there is no trace of tartar, where the patient cleanses his mouth after each meal and practices antiseptic mouth-bathing. (I use the word mouth-bathing,—rather than wash,—because I believe the patient must not only take the wash in his mouth for a few seconds, but in order to have any benefit from it, must keep it in his mouth for at least five minutes before throwing it out. Even bichloride 1-1000 requires at least two minutes to sterilize the mouth.) If buccal cleanliness is thoroughly maintained, general mercurial disturbance will appear before there are any of stomatitis."

DR. BRYAN: "It is unfortunate that Dr. Royce lost such important members of his canine family, and it is to be hoped that in future experiments in such a distinctly scientific research, circumstances of environment will not be permitted to modify results. It would seem necessary to be absolutely sure about the parentage of the litter. Such means should be taken as will insure the whole family to be by the same father. The great difference in the size of the crania presented would suggest the possibility of a different parentage. Dr. Royce's plan of using rabbits for his further experiments will probably give more reliable results than with dogs. The disturbance of the development of the enamel, in the case which was treated with calomel is most marked and of great scientific interest."

DR. ROYCE: "It strikes me as a very strange coincidence that in both the cases presented by Dr. Luce and Dr. Monk, as well as that presented by myself, all showing marked defects in the formation of the enamel, the incisor teeth did not meet; and that while these teeth were rather short they were not short enough, to account, of itself, for the defect. It is a question in my mind whether the same cause that interrupted the formation of the enamel has not prevented the development of the incisive portion of the superior maxillary. I have seen the same defect before associated with these teeth, but it has never struck me as being usual."

[TO BE CONTINUED.]

## FIFTIETH ANNIVERSARY OF THE DISCOVERY OF ANÆSTHESIA BY HORACE WELLS.

HELD IN PHILADELPHIA, DECEMBER 11, 1894.

Over one hundred visiting dentists, a large contingent of the local profession, and the students from the Dental Department, University of Pennsylvania, Philadelphia Dental College, Pennsylvania College of Dental Surgery and from the Medico-Chirurgical College to the number of eight hundred assembled in Association Hall at 2 p. m.

Dr. J. D. Thomas, Chairman of the Executive Committee, called the meeting to order, and introduced Dr. J. Y. Crawford, of Nashville, Tenn., President of the American Dental Association.

Dr. Crawford said: "Mr. Chairman, Fellows of the Dental Profession, Ladies and Gentlemen: At the meeting of the American Dental Association at Old Point Comfort, Virginia, on the second Tuesday of August last, a resolution to organize this memorial occasion was introduced by Dr. J. D. Thomas. This magnificent assemblage is the culmination of that resolution, and this is the gathering to celebrate the emancipation of the human family from pain by the discovery of Anæsthesia. Fifty years ago today, Horace Wells made the first legitimate exhibition of Anæsthesia, under proper restrictions, in a surgical way, which will entitle him to as much recognition at the hands of a just and liberal profession as was accorded to Jenner, Harvey and Pasteur. The incident of the bruised knee was to Wells what the inadvertent remark of the milkmaid was to Jenner. They were both pivotal contributions to the healing art."

Dr. Thos. Fillebrown, of Boston, was introduced and read an exhaustive paper on "The History of Anæsthesia," of which the following is an abstract: Great discoveries and events do not burst forth with Promethean suddenness, but wait long periods of hope and may be despair. So it was with the discovery of Horace Wells, which robbed pain of its victory and the knife of its horrors. The ancient nations hunted for anæsthesia. Homer mentions the inhalation of hemp for that purpose. Pliny and Apuleius refer to the mandragora wine; the Chinese used hemp in the third century; Theodoric described the *spongia somniferum* in the thirteenth century. Ether was also known at that time. In 1800 Sir Humphrey Davy said nitrous oxide might probably be used to advantage in surgical operations where there was no great effu-

sion of blood. But the suggestion bore no fruit for nearly half a century. Of the two anæsthetic agents, Protoxide of Nitrogen and Sulphuric Ether, the former was discovered by Priestly, described by Davy, and applied by Wells; the latter was discovered in the thirteenth century, named in the eighteenth, and applied in the nineteenth. In 1846, its use was made known by Dr. Wm. T. G. Morton at the Massachusetts General Hospital. The anæsthetic properties of nitrous oxide were long known and applied for the entertainment it afforded, but the chasm separating that from its true utility was unbridged until fifty years ago today, the man whose honor we celebrate, by inhaling the gas and having a tooth extracted without pain, fulfilled Davy's prophecy, and made practical anæsthesia a discovered and demonstrated reality! That event, the birth of Pain's Victor, was the source of our knowledge of anæsthesia, and made the name of Horace Wells echo around the world. In the following winter Dr. Wells made a visit to Boston, and through the kindly offices of his former pupil and partner, Dr. Morton, who afterwards introduced Ether, and was a claimant to the discovery of Anæsthesia, made an exhibition to the Harvard medical class, by permission of Dr. J. C. Warren. The attempt was an apparent failure. The patient was incompletely anæsthetized and cried out, as they frequently do, and Wells was greeted with hisses of derision. The patient afterwards said he experienced no pain. This failure so disheartened Wells, that he shortly abandoned dentistry and committed suicide by severing a jugular vein. With the unparalleled honor of the discovery by Horace Wells, the names of G. Q. Colton, Col. Samuel Cooley, Dr. J. M. Riggs, E. E. Marcy, W. T. G. Morton, Oliver Wendell Holmes, Jackson and Bigelow are indissolubly connected. Marcy suggested ether to Wells instead of nitrous oxide; Morton made the first public application of ether for surgical anæsthesia; Jackson claimed to have suggested ether to Morton, and Oliver Wendell Holmes suggested the name anæsthesia, which is "repeated by the tongues of every civilized nation." Dr. Crawford W. Long, of Athens, Ga., claimed to have given ether three times in 1842-3. It was not printed until 1849. How could he resist flying with joyous wings to proclaim to a waiting world the great boon to humanity? The honor of the discovery is not accorded to Long, on account of its unauthenticity, and its tardy publication. If he used it, nobody knew it, and

nobody used it because Long did. Then came a long list of pretenders, denominated generically "jump-up-behinders." In 1846, Sept. 30, Dr. Wm. T. G. Morton administered sulphuric ether for the first time. He made a public demonstration at the clinic of Dr. John C. Warren, at the Massachusetts General Hospital on Oct. 16, 1846. Morton and Jackson made a joint oath to the discovery of ether as an anæsthetic and applied for a patent; the next year each claimed to be the individual discoverer. The application was discarded and declared not patentable. In 1847, the Paris Academy proclaimed Morton and Jackson the joint discoverers, but after a full hearing, they decided that the honor belonged to Horace Wells, as the first to use gases and vapors to perform surgical operations without pain. In 1847, Sir James Y. Simpson of Edinburgh made experiments which gave Chloroform as an anæsthetic to the world. Whom, then, shall the honor of Anæsthesia's discovery make immortal? To each and all of the glorious names who made their individual contributions. But the noble, generous mind, that conceived the grand idea, and conferred Science's greatest boon on Humanity belonged to the immortal spirit of Horace Wells. The facts maintain the truth of his priority: disputation but weakens the evident conclusion. In honoring his memory, we should regret his sad and tragic end. It is a peculiar fact that his rival claimants both met with violent deaths. Morton died suddenly of apoplexy, while Jackson was insane the last seven years of his life. Thus did the Shears of Fate cut the tent-ropes of their lives. Let us lay the chaplet of honor on his memory. Would we might with it crown his head. The everlasting epitaph of this martyr and hero, will be:

"TO THE DISCOVERER OF ANÆSTHESIA—HORACE WELLS!"

Prof. James E. Garretson of Philadelphia was then introduced. After thanking the audience for their ovation, he said there was in the audience one whose presence afforded him much pleasure—Mr. G. Q. Colton. We are here to honor Wells. Without a Colton, there could be no Wells. We are going to erect a statue to Wells. Let us begin by showing our respect for Mr. G. Q. Colton. Mr. Colton was presented and seated upon the stage, Prof. Garretson delivered an address on "The Benefits of Anæsthesia to Mankind." He said he was overwhelmed at the contrast of the occasion and the speaker. It is not profanation to compare the reverence of a priest, when he uncovers the Host, in the profundity

of holiness, to his own feelings when he speaks of the greatest of God's gifts to humanity, "Silence is Golden." Anæsthesia is the gold of silence. The silence of pitying lies in the presence of torture, shorn of its horrors. The ring of a bell is in its metal; the ring of a man is in his work. Horace Wells! It does not nor will not still. It rings and rings and rings in distinctness, albeit accordant and discordant sounds are everywhere around. He was a vessel capable of holding and was filled. In him the river of Lethe found a channel. Everywhere over the land flows the stream of Nepenthe. The melody of music is not a note; the inspiration of a poet is not grammar. The ghost of anæsthesia was in the camel droppings on the desert, in the fields red with poppy. Ether was named by Frobenius. But who dreamed of the wonderland of Euthenasia, contained in the bottle on the chemist's shelf? Cadmius saw letters. Shakespeare saw the fullness of Expression. Horace Wells saw in the room at Hartford, what had ne'er been seen before—Anæsthesia. Some had seen the filmy halo that meant Anæsthesia, but it was forgotten. Sir Humphrey Davy saw the outskirts of Elysium; but it was only in thought. The seership of Horace Wells was practical. While pain is painful, his name will be upon the lips of men. Apples ripened and fell before Davy guessed their secret; kettles boiled and hissed without telling their story; electricity flashed athwart the firmament long before it was harnessed; the sun's rays made perfect pictures; but there were no takers of these gifts. Alexandria told the story of steam; Pipon invented the cylinder; Fulton launched a steamboat, and Stevenson a train of cars; Daguerre made beautiful counterfeits of nature by the aid of the sun; and Mozart told by note what the flowers were doing. Was anæsthesia as anæsthesia known to surgery before 1844, as it became known in that year and has been since? Not nitrous oxide, or ether, or chloroform; not rapid breathing, but anæsthesia. The man of that year was Horace Wells. Anæsthesia! What would the world do without it! What could it do! What did it do! Think of an operation without it! A mother with tear bedimmed eyes, in despair and misery follows with trembling steps, the nurse who bears her first born to the operating table. The cries of the innocent babe mingle with the agonizing shrieks of its mother, It is held by force; she is torn from its side, and as she hears the heart-rending moan, falls down in a heap and is borne from the room screaming and crazed, curs-



ing God as a being without mercy. Now, a child who has a deformity to be corrected, is cuddled while he crowingly inhales the subtle fumes of chloroform, and dreams of Babyland embowered in roses while the operation is quickly accomplished. The name of the maker of this picture? Horace Wells! Hail to the Poets, Musicians, Seers, whose statues of enduring brass mark our working places! Hail to all the seers! Immortals! Hail to Horace Wells!

The Chairman announced that the consideration of a plan for a permanent memorial to the discovery of Horace Wells would be entertained.

Dr. L. D. Shepard offered some resolutions drafted by the executive committee, in reference to the discovery of Anæsthesia, which were approved with unanimity.

Dr. R. Huey of Philadelphia moved that a committee be appointed by the President of the American Dental association, to secure funds for the erection of a Memorial in Washington City.

Approved. (Committee to be announced.)

The Chairman introduced Mr. G. Q. Colton, of New York, who gave the following Historical Reminiscence:

In the words of Anthony at the funeral of Cæsar, I can say:

"I am no orator, as Brutus is;  
But, as you know me all, a plain blunt man,  
For I have neither wit, nor words, nor worth,  
Action, nor utterance, nor the power of speech  
To stir men's blood: I only speak right on;  
I tell you that which you yourselves do know."

On the 10th of December, 1844, I gave an exhibition of the amusing effects of nitrous oxide gas in the city of Hartford, Conn. After a brief lecture on the properties and effects of the gas, I invited a dozen or fifteen gentlemen to come upon the stage who would like to inhale it. Among those who came forward was Dr. Horace Wells and a gentleman by the name of Cooley. Among those who inhaled the gas was Mr. Cooley. When under its influence, he began to dance and jump about. He ran against some wooden settees on the stage and bruised his shins badly. When recovering from the effects of the gas, he went to his seat, next to Dr. Wells. Dr. Wells said to him: "You must have hurt yourself." "No," said Cooley, but at the same time he began to feel some pain in his legs. He was astonished to find his legs all bloody—

said he felt no pain till the effects of the gas had passed off. At the close of the exhibition, and while the audience was retiring, Dr. Wells came to me and said: "Why cannot a man have a tooth extracted when under the influence of the gas, and not feel it?" I replied that I did not know, as the thought had never entered my head. Dr. Wells said he believed it could be done; and that if I would bring a bag of the gas to his office the next day, he would try it himself. The next day I took a bag of the gas to his office, and Dr. Wells called in Dr. Riggs, a neighboring dentist, to perform the operation. I administered the gas to Dr. Wells, and Dr. Riggs extracted a decayed molar tooth. On recovering and finding his tooth out, Dr. Wells slapped his hands upon his knee, and exclaimed, very excitedly: "*It is the greatest discovery ever made. I didn't feel it so much as the prick of a pin.*" That was the first tooth ever drawn without pain, and was the birth of anæsthesia. This operation took place just fifty years ago today. The discovery of anæsthesia, and its practical demonstration, belongs entirely to Dr. Wells.

Mr. Charles T. Wells, of Hartford, Conn., the only son of the great discoverer, was presented to the audience.

Dr. Donnelly, of Washington, moved that the Committee be instructed to take into consideration the feasibility of establishing a National Memorial Hall in connection with the Wells monument.

A magnificent banquet was held at the Union League, at 6:30 P. M.

Dr. E. T. Darby, of Philadelphia, presided as toast master. Gen. Joseph R. Hawley, U. S. Senator from Connecticut, responded to the toast, "The Horace Wells Discovery—Its National Significance." He asked: How many thousand years were added to human life by the result of the great discovery? How many years of agony were thrown into the bottomless pit of oblivion? He knew the office in which this discovery was made. He knew the gay and frisky Col. Sam Cooley who danced about and barked his shins, and was the innocent cause of the brilliant discovery. He exhibited the book of Wells. Truman Smith, the venerable lawyer of Connecticut, and scores of Hartford's great men testified to the validity of Wells' claim. He had been present the day before at the anniversary celebration in Hartford. It took those eighty-year-old enthusiasts until midnight to erect the bronze tablet. He felt honored at being present at both celebrations.

Prof. James Truman, of the University of Pennsylvania, responded to the toast: "Anæsthesia as a Dental Discovery." Prof. Truman was reminded of the story of the Ugly Duckling that came out late, was picked at, and loved by no one. But it was able to swim and fly, and was adopted by a tribe of wild ducks, and afterward became a beautiful swan. Dentistry came in late—the last half century; but today her representatives have assembled here from fourteen states, in a high professional spirit to do honor to one of her greatest men. Horace Wells lived in the period of transition in Dentistry, when every man's hand was against his neighbor in professional matters. He was broader. He reached out after the great world that Goethe loved. He went to the center of medical education—Boston—and was hooted out of the medical profession in disgrace. But every age has stoned her prophets, as every age will continue to do. Dr. B. W. Richardson, of London, in the last few weeks, in Longman's Magazine, has tried to tear the laurel from Horace Wells and place it on Sir Humphrey Davy. The parable of the sower is applicable. Priestly was the stony ground; Sir Humphrey Davy was the poor soil—he was a dreamer. The receptive brain of Horace Wells was the good soil that bore fruit in the amelioration of pain. When for the first time modern anæsthesia was exhibited, amid the anxiety of the surgeon, the excitement of the students, when for the first time they beheld a patient passive under the surgeon's knife, did anybody think of Sir Humphrey Davy? When we look back over the great battles, the terrors of hospitals and the accidents of life, who can aggregate the benefits of Anæsthesia? It was in the humble home of the Hartford dentist that the still small voice whispered in the wilderness of suffering. And that whisper will echo and re-echo until the cry of agony shall be silenced forever. O Dentistry! though not the first born of this our nineteenth century, in our heart of hearts we enshrine thee. Thou hast given anæsthesia to the world.

Prof. J. William White, of the University of Pennsylvania, responded to the toast, "Anæsthesia as a Factor in the Evolution of Surgery." The discovery of anæsthesia is a priceless gift to surgery. Like an enchanted Genii of the Arabian nights it transports one from conscious suffering to the dreamy slumber of oblivion. If it had contributed nothing more to the victories of surgery than the transformation of a screaming sufferer into a plastic, unconscious patient for the surgeon's knife, it had added incalculably to

its efficiency. But that is the least of its blessings. It brought possibilities of an incredulous advance. Hundreds of operations undreamt of in 1844 have saved the lives of countless thousands. The processes of disease and trauma in regions uninvaded in pre-anæsthetic days, were helpless and hopeless before the inspiration of Wells fifty years ago. The advance of this period has outstripped that of eight hundred years. In it, aseptic and antiseptic surgery has developed, and almost wiped out certain forms of suffering, disease and death. Surgery has not reached its culmination. Investigation, research and experiment are advancing rapidly. The prizes are still great; Tubercle and Cancer remain to be conquered, and though we may not live to see it, it will ultimately be accomplished. The age is full of glorious men vigorously anticipating the splendid hopes of the future. All glory to Horace Wells, the builder of the foundation and the layer of the corner stone,

Prof. Horatio C. Wood, of the University of Pennsylvania, responded to the toast, "The Debt of Medicine to Anæsthesia." Once there were two twins. One was lusty and eager, always shouting its own praises; at the fore front of battle, revelling in blood, accident and death. The other was modest and retiring, thinking much but speaking little. And one was Surgery, and the other Medicine. To the twin Surgery Anæsthesia came as a great gift. To Medicine, it didn't at first appear to be such a great boon. But there are now many diseases that attack the mortal frame, that could not be relieved without the great gift from Hartford. Were it not for anæsthesia, few would have the courage for vivisection; and were it not for vivisection, there were no modern medicine. Anæsthesia has made modern physiology, antiseptic surgery and advanced medicine the great, wonderful structure that we stand off and contemplate with such reverential awe. That is what anæsthesia has done. Not simply to quell pain momentarily, but made possible modern medicine. He hoped the dental profession would erect a monument to one of their guild who was such a benefactor to mankind. He did not know of a single statue erected to a medical man in the United States. When Leidy died, the greatest man Philadelphia ever produced, the one man who was ever crowned by the immortal leaf of the French Academy, the newspapers only had five or six lines about him.

Col. Alexander McClure, editor of *The Times*, Philadelphia,

responded to the toast, "The Mastery of Pain from the Standpoint of the Layman." Col. McClure remembers the transition of dentistry from a critical condition to its present position of wonderful achievement. He remembers when the blacksmith of the village pulled teeth with a gimlet having a screw in its end, and the itinerant dentist "stood" one day at one place and the next at another. He recollected the introduction of anæsthesia forty-five years ago. He was then publishing a country newspaper—the only time in his life when he thoroughly understood the newspaper business. He and his apprentice instituted a series of experiments. The apprentice proposed to have a young physician give him chloroform; the Colonel was quite willing that it should be administered to the young man. It was administered with great success. Every case of type being upset, hence he claimed some credit for its advance. About thirty years ago he was suffering from an aching wisdom tooth. He had read of the gas. He came to Dr. Thomas, saw the list of some eighteen hundred persons who had taken it successfully; but he saw no instruments. He took a deep inhalation—then another—then . . . ! Suddenly he woke up, and asked if the tooth had been pulled. He was assured by seeing the offending member. Since then, when he has a tooth to be extracted, he walks quietly to the dentists' office, takes a whiff of gas, and all is over.

Prof. Wilbur F. Litch, of the Pennsylvania College of Dental Surgery, responded to the toast, "The Development of Our Knowledge of Anæsthesia." He said the discoverer of Anæsthesia had done more to promote the happiness of mankind than all the philosophers from Sophocles to Mill. In 1832, Velpeau declared painless operation in surgery a chimera; but, later, he did an amputation under ether. The ancients sought for some analgesic in mandragora, hyoscyamus, opium, and hemp. The stupefying effects of alcohol were more safe and effective. The marvel is why alcohol to its full intoxicating effect was not systematically employed. "Years teach much which days never know." (Emerson). Ether was known five hundred years; nitrous oxide seventy years before Wells' time. Anæsthesia is a flower that has blossomed slowly on the cross of suffering. It is recorded that the Romans offered a lethal draft to him who bore the typification of human suffering. Humanity to-day drinks of subtler influences. He referred to the report of the Hyderabad commission on chlo-

roform, and mentioned the use of cocaine in the production of local anæsthesia. The ideal anæsthetic, one that was perfectly free from danger, remained to be discovered. At present, nitrous oxide with oxygen is the best, but for the mechanical difficulties.

District Attorney Geo. S. Graham, of Philadelphia, responded to the toast, "The Medico-legal Aspect of Anæsthesia." The toast reminded him of Daniel O'Connell calling a man a nefarious ruffian because the phrase was high-sounding. The story of a man knocking a hole in the cellar wall to let the dark out was applicable to it. Anæsthesia in its broad sense, including alcohol, made many subjects for the legal surgeon's knife. When Dr. Thomas gave him gas for the extraction of a tooth, he heard a seraphic symphony from the Heavenly spheres, but when he awoke, he found the music came from a music-box, and was administered with malice aforethought. That was the first connection of anæsthesia with the law. He said law was not in sympathy with vivisection—he once lost a dog himself. The highest tribute from a sister profession is the reiteration of the praise bestowed by one's own profession. If a man lives in their memory, and is honored as the discoverer of a great good to suffering humanity, that is the loftiest pedestal on the footstool of God. Esteem and honor to pioneers, in discovery and advancement. The whole world joins in sweet acclaim of praise to the memory of Horace Wells!

Rev. S. D. McConnell, of Philadelphia, responded to the toast, "The Humanitarian Aspect of Anæsthesia." Most persons have learned the ability to escape from the text; but he would rather be the discoverer of anæsthesia than to be any man that ever lived. When all the achievements of this century shall be forgotten, this one great controlling event that happened once in the history of humanity will remain. The old books on theology discussed at interminable length the meaning and use of pain, claiming that it was eternal, insoluble, the result of evil, and the punishment therefor. The measure of sensibility to pain is the measure of civilization. Low civilization is comparatively indifferent to pain. This is an age of physical anæsthesia; of moral and mental anæsthetics. All the philosophizing about pain cannot make us bear with equanimity some other fellow's pain. Pain is demoralizing, and its relief is elevating. It begets gentling of manners and thought, tenderness and compassion. The man who has done this, has taken out part of the unspeakable anguish of parturition, has saved



innumerable lives, has enabled timid souls to look serenely upon suffering, and walk triumphantly to the end.

Mr. G. Q. Colton related some amusing experiences in connection with the administration of nitrous oxide and tooth extraction, and concluded with the masterly advice of Polonius to his son Laertes.

Mr. Charles T. Wells, the only son of the immortal dentist, gave some personal recollections of his father.

At a late hour the company dispersed, having honored the memory of the discoverer of anæsthesia in a fitting and suitable manner.

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#### DR. W. J. YOUNGER ON PYORRHOEA.

Perhaps it would be well for me to summarize the arguments for and against the theory of pyorrhoea alveolaris being due to constitutional diathesis. The arguments in favor of pyorrhoea alveolaris being of constitutional origin are what?

1. That it is found in persons afflicted with gouty diathesis.
2. That traces of uric salts are found in the calculi of some of the people afflicted with the gouty diathesis.
3. That the condition of irritation in the gums and around the roots, and the discharge of pus, are modified by constitutional treatment.

In opposition to this we find:

1. That pyorrhoea is found in persons having no constitutional cachexia or diathesis.
2. That if it were of constitutional origin it would be found in all, or at least in nearly all, cases having the gouty disposition.
3. That the amelioration of the irritation by constitutional treatment is what would occur in any local irritation when the system would be placed in a healthy condition.
4. That if it were of gouty diathesis the deposits from the saliva would also be impregnated with these urates.
5. That, if it were of constitutional origin, constitutional treatment would be necessary for its cure; but, instead, local treatment is found sufficient for its complete eradication, notwithstanding the constitutional ailment is continued in undiminished force.

6. In all cases of pyorrhoea alveolaris we find a connection between the calculus and the cavity of the mouth, which would not necessarily be so if it were the result of a constitutional pathologic state.

Besides these points, Dr. Van Woert asserts that the disease is communicable by infected instruments which, if true, would prove a strong argument against the theory of constitutional development.—*Journal Am. Med. Assn.*

# The Dental Digest.

PUBLISHED THE

TWENTIETH DAY OF EVERY MONTH.

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## Editorial.

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### SALUTATORY.

THE DENTAL DIGEST is the child of necessity. At the present time, in the United States, no journal fills the niche which this periodical will try to occupy. The publishers do not, and the editor cannot promise that everything new will first find its way to the public through its columns. An effort will be made to render the reading pages interesting and profitable to the subscriber. No legitimate means will be spared to present from month to month a DIGEST of important discoveries and inventions of the whole world, but it is not our intention to digest *bizarre* and useless matter. Legitimate topics in education, legislation and theory and practice of dental surgery, with reviews of books, brochures and news of the most varied and select character, will be treated in the most impartial manner in these pages.

Heretofore the body of dentists practicing in the United States have had no mouthpiece, today our columns are open to all for the discussion of any vital question in ethics, patents, literature, science, practice or on cognate subjects. It will be the aim of those responsible for its monthly issue to offend none, but this does not mean that all subjects will not be treated in a fair and candid spirit. We reserve the right to fight shams and deceptions whenever found, to point out fallacies and to speak a word of warning to those who are regardless of the proprieties of professional life and its objects.

THE DENTAL DIGEST only asks a fair trial to demonstrate its right to live and thrive with other engines of liberality and progress.

## THE MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

ABOUT fifty years ago in Cincinnati, Ohio, was organized the oldest dental society in the world; that is, it was not the first organized, but it has been continually in existence from that date to the present time. What society in dental history can boast such a past? Among the living there are few who were present at the first meeting, but of the departed we remember the names of James Taylor, Geo. Watt, W. H. Atkinson, W. H. Shadoan, H. E. Peebles, W. W. Allport, Wm. Albaugh, F. H. Rehwinkel, W. H. Goddard, W. H. Eames, A. M. Moore, G. A. Wells, J. A. Kennicott, Geo. W. Keely, B. D. Wheeler, C. R. Taft, A. Berry, J. Richardson, S. J. Cobb, M. S. Dean, A. O. Rawls, J. Hardman, J. P. Ulrey and a host of others who contributed to make the society famous in its earlier years. The most conspicuous living, lifelong members are J. Taft, H. J. McKellops, W. H. Morgan, Geo. J. Friedrichs, Geo. H. Cushing, C. R. Butler, W. P. Horton, J. G. Templeton, Francis Peabody, W. N. Morrison, H. A. Smith and P. G. C. Hunt. The lists are far from complete, as to name the whole number would take too much of our space. We understand that it is the purpose of the present officers to celebrate the semi-centennial in March next and we wish to contribute our mite toward making it a success. If a definite program is not already mapped out we suggest that a condensed history of the society be presented by one fitted to do it in the best possible manner. So far as is known but one man can do the subject justice, and he is Dr. E. G. Betty, of Cincinnati. The labors of the historian are not fully recompensed during life in many cases, but a grateful posterity will erect a monument to the makers of important discoveries, and the milestones of progress will be scattered along the pathway of those who assist in rendering the past an easy lesson to read.

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### ECONOMY OF TIME.

If there is one thing more than another that the dental profession need to practice it is economy. At this time we will only speak on economizing time in regard to reading matter.

Almost everything that is written is but a repetition of other men's thoughts handed down in different shapes from time to time. There is but very little real original thought. If these propositions are true, a writer in order to gain appreciative attention must place his productions before the average reader so that the valuable thoughts are not too far apart, or in such language that the thought is not lost while the entire article is being read. We think this is especially true of dental literature. A busy dentist does not have time to wade through reading matter which occupies a great number of pages, the thought of which should be put into one-third of the space.

It is hoped in this new enterprise of ours we shall be able to get together and condense the thoughts of many periodicals so that the important matter in the great number of dental journals can be placed before our readers in a way that they can get it with much less labor than to read each article in full, and avoid such as have no thought, or not enough thought to waste time upon. The need of such an organ has been urged for twenty years; but we think there never was a time when it would be as much appreciated as now, as the organs of communication have been so multiplied by various interests, that even the most intelligent practitioners have become discouraged rather than encouraged in reading what would be a benefit if placed before them in a condensed form. We have herein suggested one reason why the dental profession read so little of dental literature.

We believe a department of our journal which contains the valued thought condensed in just space sufficient to make it intelligible will be valuable, as it will enable the busy man to get the benefits without wasting the time and thought necessary to get the information desired in the form such articles and discussions are now published. This may deprive many articles of what the author considers necessary in the way of syntax or oratory, but will be a great economy of time and give to our readers what they otherwise could not get on account of the effort necessary to read so much chaff for so little grain.

It can hardly be expected, however, that this feature of the journal can be so fully carried out in our first number as it will be in subsequent issues. Our space is limited, and the insertion of introductory matter and original communications is absolutely necessary to make our first number complete.

## DENTAL PROTECTIVE ASSOCIATION OF THE UNITED STATES.

As the DIGEST goes to press we are entering upon the eighth year of work in this association—work which has been attended with difficulties, anxieties, interest, excitement and, we trust, profit to the members and the profession at large.

Never was an association begun with less to encourage, never one beset with greater obstacles in its progress, never one more successful in accomplishing its purposes! It has so far in its history won every suit which has been brought against any of its members. And these suits have been brought in all parts of the country. It has one suit now pending with the International Tooth Crown Company, viz: the Low Bridge Patent. Much time and effort have been spent in preparation of defense for this (we trust the closing) suit.

Several times during the year it has been necessary to visit the Eastern cities and once to cross the Continent from New York to California to take testimony for this case. The evidence is at last substantially in, and the case would have been argued before this, but that complainants up to the present time have failed to establish any good title in the International Tooth Crown Company to the Low Bridge patent; hence time has had to be granted them to sustain this title. If they are able to do this, the case will be argued in the near future. In case the Dental Protective Association is successful in this suit, and we have every reason to expect such a result, it might seem as if its work were ended; but this is *far* from being the case. The association is now defending two other patent suits brought against its members by other patent companies, and in addition to these still other suits are threatened. It should also be borne in mind that the object of the Dental Protective Association is not solely to defend patent suits, but to *band the profession together* and place it in a position where it can successfully resist extortion or injustice in any form.

Lest some should be confused as to the relation of the Dental Protective Association, the Dental Protective Supply Company (of the United States) and the DENTAL DIGEST, we offer a word of explanation. The Dental Protective Association and the Dental Protective Supply Company are distinct organizations and exist as separate corporations. The Dental Protective Association was first made necessary to relieve the profession of the abuses of

patent claimants, who by various processes and ways that were dark have kept the profession under their control for the last forty years. Their claims for royalty on various methods of practice amounted to little less than blackmail, and yet the individual practitioner has been powerless to resist them. But these claims were only a part of many wrongs and much injustice which have been imposed upon the dental profession, hence it became evident as the work of freeing ourselves from long endured thralldom progressed, that a second organization was quite as necessary as the first, and the Dental Protective Supply Company came into existence to meet our farther needs. This in turn increased the necessity of a means of communication with the members of the dental profession, so the DENTAL DIGEST greets you and we trust will soon become a valued friend in every dental office. We shall fully appreciate this improved method of communication after the laborious process of reaching the constituency of the association for seven long years through postals and circulars. All the dental journals are controlled by supply houses, or are dependent upon the support received from their advertisements, so that it has not been easy to reach in this way even those who take dental periodicals. The reason for opposition from dental dealers will be made clear later through the DENTAL DIGEST, which will be the organ of the Dental Protective Association; but will be published, controlled and managed entirely, including its finances, by its younger brother, the Dental Protective Supply Company. For further information as to the plans of the Dental Protective Supply Company we would refer you to another page of this journal. The DENTAL DIGEST will be the medium for any communications we may wish to send to the members or to the profession at large. Its columns will also be open for questions and answers concerning the work of both organizations.

In the rush of issuing the first number of our journal, we have not had time to give anything like a resume of the work of the Protective Association; but intend as soon as possible to give a complete but condensed history of what it has accomplished.

With increased facilities for becoming acquainted with the progress being constantly made in all our lines of work, we feel sure the bond of interest and sympathy will grow in the profession, and that increased co-operation in the building up of both of these organizations and of the journal itself will be the result.



## HORACE WELLS MEMORIAL CELEBRATION.

The celebration held in Philadelphia December 11, was numerically well attended considering the time of the year. About one hundred dentists were gathered in the Quaker City to do honor to the memory of the discoverer of anæsthesia, Horace Wells. The large auditorium of Association Hall was well filled by the attendance of local members of the profession and the dental students from the three dental schools. The papers were both interesting and instructive. The banquet in the evening, given in the Union League Club, was attended by about one hundred and fifty. The speeches were numerous and most of them were good, especially the ones by Drs. James Truman and W. F. Litch on the part of the dentists. The speeches of Col. McClure and Mr. Graham, of Philadelphia, and that of the Rev. McConnell, were quite taking by their spice and the energy of their delivery. Senator Hawley, of Connecticut, and the son of Horace Wells, both spoke in a reminiscent manner of the great discovery. The remarks of Profs. J. W. White and H. C. Wood were brief and pointed, especially those of Prof. Wood. Everything passed off in the most decorous and solemn manner befitting the nature of such an event. It was made evident during the day and evening that the credit of the discovery of anæsthesia belongs to Dr. Wells, and no other claimant, so far, can antedate his public proclamation of this great boon to medicine.

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## LETTERS.

*To the Editor of The Dental Digest:*

DEAR SIR: For your first number of the DIGEST you wrote me for an article from "your well known pen" among many others you had thus complimented.

You did not inform me of the title of your journal or its mission, or give me any hint of what you wished from my pen. Having since learned, however, it is in the sole interest of the Dental Protective Association and dentists generally, I have presumed to write on the prospects of such an enterprise.

As to the need there can be no doubt. How to meet the issues that have foiled other such efforts, your experience in journalism will very naturally aid you in the problem.

If you can impersonally edit, then, the results will be greater and more lasting. If you can recognize that the dental profession, of all grades, should be made a unit and to act in harmony with the Protective Association and uphold you in your department, you will have scored many points.

If you will publish original matter whether it comes from a member of a society or from an individual who does not belong to any organization, you will do much to inspire and stimulate many good men who do not care to run with cliques, be in rings or in politics.

If you will stoop to extract the essence (digest, if you please) from any and all publications, whether dental, medical or secular, bearing at all upon our art, then you will have a *multum in parvo* journal that will fill a field not hitherto attained.

If you are to do what is enscribed on your title page your task will be one needing the highest qualities of brain and heart to do justice to every original article, or when you quote or extract.

Your future will be taxed to the uttermost to bring assimilated material out of badly masticated food, for mental pabulum that will give nutrition for better organized work and impart higher functional activity.

For one man to grasp the varied work and thought of dental art and science in its ramifications up to the present hour, is too much to expect.

Associates of the highest talents and qualification who are known for their manipulative ability, who can demonstrate by pen and instrument their specialties, should stand by him and help in general consultation as well as judges of "courts of arbitration"

You should forget that you ever had any professional feeling against any member of your profession, and never refuse to acknowledge genuine worth in an enemy, or one who is in many respects beneath you.

Universal love for *all of us* should be your direct aim, and truth ever be your motto, which alone will bring a lasting victory.

The work of the Protective Association has scarcely begun. It has a distinctive field of operation, and, with a journal now as a mouthpiece, it should move to the front and make the "powers that be" feel that the mass of the profession have at last risen to their dignity, and will no longer "bow the knee to Baal."

We have the ability, the genius, the power, and wielded by a stable organization can "carry the elections" to root out the rottenness that has so long bound us as menials to their greed. When we have done this then we can hope to be called freemen and worthy of higher honors, that await only the strong, the honest, the bold seekers for the rights and standards of a profession that should, even now, be on the same plane and have equal footing with any other profession in the world.

Personally, you must feel that the profession cannot rise through therapeutics alone. Manipulative skill, which is so largely demanded in our work, has a still higher duty yet than in filling teeth and artificial work. Let us look to that higher principle—anticipation of the ravages of caries, and still higher to that hygiene which shall rob caries of the possibility of any inroads and enable the human race to remain free from the blemish and rot that is now entailed upon them. The realization of this dream is our greatest work, and until that is reached and we can *prevent* the necessity of our handicraft, we will remain tinkers and patchers of God's most useful and beautiful of all architectural work. We have gone so far into the restorative art that it is "high noon" and we must be "called off from such labors to refreshment" where we can calmly discuss this greatest problem of our noble art and show the world that we can go further than the medical fraternity, and demonstrate we have well nigh reached the art that "Time's tyrannic claims cannot quench" —*preservation by anticipation*.

Let us do as I said in "New Era," fear not starvation when we have to give up filling, bridges and crowns, but have the courage to charge our patients (as I often do) for thoughts, knowing they have been crystallized from forty years incubation and experience, and should demand compensation as much as if manipulative skill had been given. If we can save the human teeth without our present methods we are entitled to the highest pay in love and money.

While we all should be ingenious and inventive and able to apply it to our art, to fill any breach made by Time's relentless tooth, let us not overdo this, but give our time and talents to the higher art, of not only vanquishing a foe, but rendering it impossible for such an enemy to ever invade the domain of that grandest of all God's architecture—the human teeth.

Now, dear Doctor, while I congratulate the association in hav-

ing you at the helm of this department, I do not envy you the position, but can only intimate that if I can be of service to you in any of my lines of thought and work from a long and varied experience, I am at your command. Wishing you every success, I am, a co-laborer,

W. G. A. BONWILL.

Dec. 1, 1894.

Philadelphia.

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## Bibliographical and Selections.

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### DIGESTS.

The leading article in the *Dental Cosmos* for November, is one by Dr. M. H. Cryer, Philadelphia. Subject, "Technique of Nerve Resections for the Relief of Pain about the Face and Jaws."

This paper was read before the Academy of Stomatology at its first meeting, and was the first paper.

The author, after complimenting the society upon its name—Academy of Stomatology—and the advancement of the Dental profession, which enabled it to deal with other than the diseases of the teeth, proceeded to describe the various plans of operating upon the main nerves of the superior and inferior maxillary, giving plans of operating by different surgeons. He also described an instrument of his own design for obviating some of the different operations, which he called a neurotome. He also referred to an operation which he originated for deepening the sigmoid notch, a description of which operation was published in the transactions of the American Dental Association for 1892.

The most prominent feature of the article was a description of a new surgical engine and handpiece, both of which were very fully illustrated in the published article. We do not consider it profitable to our readers to reproduce much of the article in detail, as these operations, as at present performed, require extensive cutting of the soft tissues as well as a removal of considerable of the bony structure, and are usually unsuccessful, as the author says, "These operations generally give relief for a brief period, but usually there is a recurrence of the pain. After resection, nature endeavors to replace the lost tissues by similar new growths,

which take their place, and frequently the bony tissue of replacement encroaches within the canal to a greater or less extent. These new nerve-fibers are liable to become entangled in the new bone-formation; the pinching or pressure resulting from this may cause a recurrence of the neuralgia."

Before reading his paper, Dr. Cryer presented a patient for examination, upon whom an operation had been performed for the removal of a giant cell osteosarcoma, to accomplish which required the removal of the soft tissue involving the external walls of the antrum, the alveolar border, and including the maxillary tuberosity. This necessarily involved the loss of all the teeth in the upper jaw as far forward as, and including the cuspid. After the diseased portions were thoroughly removed, the surfaces were scraped out clean with the engine bur. At the time of the examination there was a small opening in the roof of the mouth, but the line of external incisions were all obliterated.

Dr. Cryer also demonstrated the method generally used, which has been in practice very many years, of performing an operation for the removal of one-half of the superior maxilla, and explained very fully the advantages of a surgical engine for the performance of an operation of this character. In the after-discussion there is no report of any opinion being expressed by those present.

We shall watch with interest this new society, and shall give our readers a digest of their proceedings. If we have a correct history this society is based on the theory that dentists have outgrown their name and should have one which includes a wider scope than the word dentistry implies.

Societies of stomatology have already preceded this in France and Spain, there being also a journal bearing the above name.

"A Plea for Bridge Work," by Dr. Henry M. Hills, Bordeaux. This article deals with fundamental principles that should be understood to be successful in this kind of work. After a careful reading of it we can gather but little that will be of any value to our readers. After accurate fitting of the attachments to the anchors, the factors named are Force, Strength, and Resistance. That when inserting a bridge the amount of force that is likely to be brought to bear must determine the strength needed for the bridge and what the abutments will resist. That a bridge will resist direct force, that would be destroyed by indirect force, caused generally by imperfect articulation. When the jaws move for-

ward or sidewise against the bridge as a lever (we should say that the most disastrous condition and the one which destroys the abutments quickest is a sliding force, which we will call an inclined plane). The writer says: "After a thorough investigation of bridge work, I have no reserve in concluding that there is no form of replacement which can approach in appearance, comfort and utility that of a well conceived, proportioned and constructed bridge, and I may also add with propriety, to a finished bridge, that of cleanliness." The writer concludes his article by describing methods of practice, which are not adopted in this country, viz.: that of inserting plates with artificial teeth over roots diseased and unhealthy. He then gives a case out of his own practice where a bridge is substituted for a plate. The bridge was made in two parts. From the central incisor to the second bicuspid on one side, upper; from the central incisor to the third molar on the other side. The teeth were mounted on slides according to Dr. Evans' system of crown and bridge work. It is needless for us to add here that this case, which is fully illustrated with the published article, was an unusually favorable one for a bridge, for the reason that the bridge on one side had three anchors and the other side four, making seven anchors. It needs no argument to prove to anyone who has had experience in bridge work that a bridge made in such a case as this has no equal in form of plate for utility and comfort to the wearer. It is the cases where we have to contend with long spans or distances from one point of anchorage to another, also, the many cases where the subject is a man who has lost some of his teeth from pyorrhea alvolaris and will not allow a plate to be inserted, but insists on the operator supplying the loss by some form of bridge, and he generally insists, if possible, that the bridge shall not be removable and says, "Let it last as long as it will," that puzzles the most skillful bridge-builder, and we predict that the system that will take the place of the present ones is not yet fully developed, but will be of a nature that can be removed at will of the wearer. We hope to give our readers something on this subject later.

A paper by Dr. S. B. Palmer on "Etiology of Dental Caries," read before the American Dental Association, is chiefly a restatement of the writer's well-known views regarding the electrochemical theory, all of which is summed up in the following



closing sentence: "I believe that etiology of dental caries is the effect of a universal principle based upon the potential relations of matter, oxygen being the principal element, aided by electrolysis and capillary attractions under direction of electrical energy."

The paper, however, introduces the subject of root filling, in which he condemns gutta percha for that purpose, on the ground that it "becomes changed in the root canal, and becomes odorous."

The paper elicited but little discussion, and that seemed to indicate that but few converts to Dr. Palmer's views were present.

Dr. Harlan seemed to think that he had pricked the bubble which Dr. Palmer had so earnestly presented, in the following remarks:

"Just what relation the filling of the roots of teeth has to etiology and physiology, I don't understand; but as it has been introduced, I would ask Dr. Palmer how an essential oil could become oxidized in the root of a tooth? Also, how gutta percha could become oxidized in the root of a tooth? and to ask the further question, if gutta percha is an oxidizable substance, why is it that the man who laid the first Atlantic cable, and those who have since followed, used an oxidizable substance for covering that cable in the water? I wish to say that from the theoretical standpoint, from the practical standpoint and from the scientific standpoint, the best material we have today for the filling of roots of teeth is gutta percha. It is one of the unalterable substances that dentists use, that can safely be placed in the root of a tooth without danger of disorganization.

"With reference to the main subject of the electro-chemical theory of decay, at the present time, with the published results of the experiments of Miller and Black, the electro-chemical theory of caries has no ground to rest upon. It seems absolutely determined by these experiments that decay of teeth is essentially the result of the agency of micro-organisms, through their excretory products. The electro-chemical theory of the production of decay is not proven, and the experiments of Miller must stand until something better and more definite is presented which can be substantiated, and experiments of which can be demonstrated before scientific bodies.

"With regard to secondary decay, I wish to say that the causes that produce decay in the first instance are those which produce

it in the second, and that the electro-chemical theory has nothing whatever to do with it."

The sentiment of the members present seemed to agree with Dr. Harlan's position.

Dr. Brophy read a paper describing a new operation for the exsection of the inferior dental nerve.

The operation consisted in cutting down, with a bur, from the mental foramen to a line with the general course of the dental canal, and then removing the nerve by means of flexible drills made after the form of the Gates drills, first using a small one and gradually increasing the size until the canal was so enlarged throughout its entire length as to remove not only the nerve but the lining membrane of the canal. He claimed if this were done, the canal would fill with bony tissue and no recurrence of pain could occur.

The discussion upon Dr. Jackson's paper simply brought out his views as to the best material for making regulating appliances and crib springs. The latter, he says, should always be made of German silver. If piano-wire is used with German silver, the former will corrode, and should be tinned.

The best spring for regulating purposes he considers to be piano-wire, which should be tinned if it is to remain in use for any length of time.

In answer to a question of Dr. Crawford as to the propriety of removing teeth which have been regulated after they had been gotten into position, cleansing them of calcareous deposits, and then replanting them, he replied that "a tooth which had once had a calcareous deposit was never fit to be re-implanted. Scraping the root roughens it and so supplies the first element for inflammation."

Dr. Kulp described a method which he employs for staying teeth in the lower jaw which have become loosened. He makes bands over the entire teeth of platinum, fitted as for full-cap crowns, the labial side being cut out as near as convenient to the gum. Bands are soldered together on the lingual side clear to the cutting edges of the teeth, so that the entire lingual surface is covered with gold or platinum. The piece is then put on with cement, just like a bridge.

In the discussion of Dr. Palmer's paper, Dr. Frank Abbott made some statements regarding root filling which were at least

somewhat startling. He said "he had abandoned the attempt to dry the canals."

His present method is to use aqueous solutions of bichloride 1 to 10,000, which is forced into the canal with a syringe, after the contents are sterilized and removed as far as possible, with instruments. When this is completed a little bit of cotton is carried to the end of the canal and packed tightly, without drying, and the filling material, oxychloride of zinc, is immediately inserted, the idea being to allow the antiseptic remaining to mix with the filling material and thus continue permanently in the canal. In a paper, to which he referred, he had said that he did not fill while there was any periosteal inflammation. He is now practicing the method of immediate root filling, which he finds better than the other.

The proceedings of the New Jersey State Dental Society present nothing especially new or of extraordinary interest, unless it be the paper of Dr. Maxfield, entitled "Methods of Destroying Dental Pulp," in which he says: "My method in detail is as follows: If possible I apply the dam, as it is necessary to keep the cavity dry until the pulp has been injected. After drying out the cavity I uncover the pulp, and this is done in an almost painless manner by first blowing on warm air, then an application of a saturated solution of cocain in alcohol and ether or chloroform, equal parts, allowing this to remain about thirty seconds, then another application of warm air, continuing in this way till sensitiveness is wholly obtunded. As soon as the pulp is exposed,—and I only desire to expose a spot as large as the point of my hypodermic needle,—I apply crystals of cocain and moisten with campho-phenique. After standing thirty seconds I apply warm air for a few seconds, and then attempt to work the crystals into the pulp. In from two to ten minutes I am able to introduce the needle of the syringe without pain. With a quick push I force the piston down and at the same time force the needle into the pulp, and it is instantly benumbed.

"I immediately with burs proceed to open up the pulp-chamber and remove the body of the pulp. As I reach the canals I occasionally find a little sensitiveness, when I have to inject each canal. I then remove the dam and proceed, with one exception, as I always do in treating a pulpless tooth. First, I have the patient rinse the mouth with a solution of hydronaphthol; dry out the cavity and flood it with hydrogen peroxid, and with a Gates-

Glidden drill ream out the canals, at the same time the drills remove the pulp-tissue, and working the drill in such a manner that the peroxid is always in advance of the instrument. When the canals are thoroughly cleansed I wipe them out, and—this is the exception noted above—I pump into each canal a saturated solution of zinc chlorid or carbolic acid, preferring the former. I do this to destroy and render harmless the minute remnant of pulp which it is impossible to remove from the constricted portion at the end of each root. If this precaution is not taken there will be more or less pain after the root is filled. As soon as the influence of the cocain has passed, sensitiveness returns to the remnant end, and if the canal is filled as thoroughly as it should be, there will be pressure at the end of the canal, causing this pain, which will not subside till the filling is removed. I allow the zinc solution to remain in the canals while I am preparing the gutta percha points; then I again wipe out the canals and pump in a saturated solution of iodoform in eucalyptol, and immediately press in the gutta percha points to the end of each canal, and proceed to fill the cavity.

“When patients come in complaining of toothache, and the pulp is still alive, if I am able to give ten to fifteen minutes, I proceed at once to remove the pulp and fill the canals. If there is tenderness on pressure of the tooth, showing that inflammation has extended to the pericementum, I give the patient, as I dismiss him, a few capsicum plasters to apply to the gum over the tooth. When I cannot give any time to the patient, I wash out the cavity with warm water, moisten a pellet of cotton in creosote and oil of cloves,—equal parts,—sprinkle on a few crystals of cocain and seal in the cavity. This generally gives instant relief, and I endeavor to attend to the case within the next two days.

“The question will be asked, Is this method of removing pulps a painless one? I answer, yes and no. In the majority of cases it is painless, but with some there is a little pain.”

It will doubtless strike the majority of readers that the puncturing of a living pulp with a hypodermic needle would be decidedly painful, but as Dr. Maxfield speaks from experience, it certainly would seem desirable to test a practice which would enable us to remove the pulp at the first sitting, instead of pursuing the tedious methods which we sometimes are forced to do.

Dr. Henry Burchard, of Philadelphia, read a paper, subject:—Science and Pseudo-Science.

The editor gives what he calls an abstract of this paper, which occupies nearly five pages, so we shall not attempt to give our readers even an abstract of that. The article is made up of small scraps of philosophy(?). We will give a sample of the most intelligible of these scraps: "As a part of the scientific body, we do suffer, and have suffered; and if we are to gauge our expectations by a not inconsiderable part of dental history of the present, we have much to endure yet before a Stomatological Utopia is to exist." Another is as follows:—"With many or most of the inquirers, searchers of the past eras, the accidental discoveries of certain constant associations between groups of phenomena have been but dry details, which are to serve as stepping-stones to the finding of a Solomon's seal; which, ultimately, is to solve the mystery of the great unknown. No matter what practical results may be achieved, they are naught. The metaphysician holds as beneath him the grovelling methods of detail search, and the ultimate is his goal."

After reading all of this article through we were befogged—we began to reflect on another subject, to make sure we had not lost our minds, or had the *Cosmos* run short of material and published this article to fill up space. Remembering, however, that the article was only an abstract, we thought it possible a mistake had been made and the rejected portion had been taken for the abstract.

We turned to the discussion which was opened by no less a person than Prof. Garretson, over a page of it gave us but little light, except that while the paper was being read Garretson heard a voice saying, "What is that fellow reading about?" Which he thought came from a young man,—not the voice of age. Could it have been an angel in confusion seeking light from our learned friend, Dr. Garretson? Indeed might not Dr. Garretson for the time being have been bewildered, for at the close of his remarks he refers us to a chapter in the *Dental Cosmos* on pyorrhea alveolaris and asks us to read it, and says we shall find it such a chapter of nonsense that we will acknowledge the truth of what he (Garretson) was trying to talk about. Which of the two articles he refers to, as there are two, one by Dr. Kirk and one by Dr. Pierce, we do not know so we reread both, and more than ever are convinced, after the second reading, that they are both the best on the subject we have yet seen. Thus with the mystery

still more mystified we turn to the discussion by Dr. James Truman, our friend and teacher, who can at all times make a speech of any length, and he could only get in a few lines out of which we can get no light, the conclusion says (to be continued) Don't!

*The International Dental Journal* for December contains a number of interesting articles. The first paper, on "The Causation of Dental Erosion," by A. P. Brubaker, M. D., D. D. S., suggests a new method for the prevention of those erosion cavities which are so often seen in front teeth. The essayist takes issue with Dr. Jas. Truman, Dr. E. C. Kirk, and others as to the pathology of dental erosion. He thinks the destruction of the enamel is the result of an acid formed as a result of a pathological condition of the labial glands. After a number of experiments, the writer recommends that the glands be destroyed by "electrolysis." The destruction of the glands should certainly be effective if they are the origin of the trouble.

Dr. E. C. Kirk has a paper on "The Laboratory Method in Dental Education," wherein he advocates the practical instead of the didactic method of instruction. This article will receive due consideration in a subsequent issue.

"Some Details as to the Care of Dental Instruments" is the subject of a paper by Wm. H. Potter, D. M. D., which calls attention to the necessity of keeping the instruments used in everyday practice well sterilized. The writer recommends the use of the Arnold Sterilizer, with a zinc tray made to fit, to accommodate the instruments. These are covered with a solution of soda carbonate and raised to a steam temperature for a certain time, after which they are dried. This is a subject which every practitioner should be informed upon, as, owing to the recent advances made in bacteriological research, it is a very easy matter to carry the germ of a disease from one patient to another on an unclean instrument.

"Cervical Cavities and their Treatment" is the subject of a paper read by Wm. L. Fish, D. D. S., before the Odontological Society of Pennsylvania. The writer showed the model of a new clamp for reaching the cervical margin of cavities, which, judging from the description, should prove effective. Every operator knows from experience how difficult it is to fill and finish a filling at the cervical margin, and any instrument that will aid in that direction should be gladly welcomed.



"Is Prosthetic Dentistry Lagging? No," is a question asked and answered by Wm. H. Trueman, D. D. S. The writer contends that prosthesis has advanced in proportion with operative dentistry, which is no doubt true. It is a question whether there are today as many dentists capable of putting up a gold or porcelain set of teeth as there were before the introduction of rubber as a base for artificial teeth. The writer seems to be under the impression that because a dentist makes rubber sets of teeth for the poorer class of patients, he is, consequently, of little importance in the profession. The trouble is that most men with such practices are satisfied to do nothing else than make rubber work on the charlatan plan of practicing. Those men never think for the good of their patients, but of the dollars that are in sight, so in consequence the "mouths of the hewers of wood and drawers of water" suffer.

There are the usual reports and discussions of society meetings.

The editorial is a resume of the growth and management of the journal, with a plea that all Dental Societies publish their own proceedings, on the ground that it is unprofessional to "barter" its work for a consideration. On this topic more anon.

In the Foreign Correspondence there is a London letter, in which the writer states an American graduate can practice in England if he only affixes to his name the name of the college from which he graduated. There is no doubt that if an American graduate establishes himself anywhere in England, and stands his ground, he will not be molested, as the English law, as it stands, is so broad that it offers many loop-holes for evading it. The English dentists, as a profession, hope to see "American Dentistry" cried down, as they allow an association in London, made up of registered and non-registered men, called the "American Dental Institute," to resort to all kinds of methods which they advertise all over the country, to bring down public condemnation, and then claim that it is *American*.

The writer, who signs himself "X," seems to be thoroughly familiar with the conditions, and, as he says, anyone can go over there to practice without "let or hindrance."

*The Dental Review* for November has for the two first papers college addresses by Profs. L. L. Skelton and Louis Ottofy, teeming with advice to students. Both articles are above the average of

such productions. Dr. H. A. Palmer, of Wisconsin, makes a plea for the retention of the first permanent molar; nothing strikingly original is to be found, the teaching being orthodox. Dr. L. J. Stephan, of Wisconsin, presents some thoughts on the "Dental Education of the Public," which is very, very good in its conclusions and recommendations. Societies have in the past published instructions for the guidance of the public, and if we mistake not a very useful book was written by Dr. A. Holbrook, of Milwaukee, which will serve as a beginning for the State Society.

Dr. C. R. Taylor, of Illinois, has a short paper on "The Treatment and Filling of Pulpless Teeth." This paper is essentially devoted to a consideration of the necessity for thorough instrumentation of the canals, and then recommends the filling of roots with gutta percha and copper points. Directions for the latter procedure are complete and accurate.

Dr. F. K. Ream, of Illinois, has something to say about "New Medicines and their Application in the Mouth." This is mostly a review of the work of other authors, except the closing portion which is devoted to the dehydration of teeth to produce insensibility by the use of alcohol from Rust's dehydrator.

The proceedings of the Minnesota Dental Society occupies twenty-three pages in which is considered the Dental Chautauqua Reading Courses, Articulation of Gold Crowns, and A Combination Crown and discussions thereon. The latter is interesting, but as we cannot reproduce the discussion the reader is referred to it (pp. 806-821).

A Model Report of a Clinic is the next article, which is alluded to by the editor, a little further on in the editorial pages.

Is the Profession Overcrowded? is the subject of the leader, which we epitomize by saying, in numbers, yes, in attainments no. Then there is a New York letter. \* \* \* The beginning of "Root Filling" is fixed at 1824, by Emma E. Chase. This is definite. Reviews and news notices fill the remainder of the monthly issue, and the announcement of the production of an electric furnace for baking porcelain by Dr. W. H. Taggart, Illinois. We will await the description of this new method with much impatience, as Dr. L. E. Custer, of Ohio, has also discovered a method of doing the same work with the same agent—electricity.

## PAMPHLETS.

PROCEEDINGS OF THE NATIONAL ASSOCIATION OF DENTAL FACULTIES.—Eleventh Annual Meeting, 1894. Louis Ottogy, Secretary. A copy of this should be in the hands of every secretary of all state boards in the United States. The codified laws of the Association are printed as an appendix.

A case of contusion and rupture of the *Ilium*, by F. H. Wiggins, M. D. Reprinted from the *New York Medical Journal*. Hydrogen Dioxide was one of the best therapeutic agents used in the treatment of the above case. *Verb. Sap.*

WHAT HAS DENTISTRY TO DEMONSTRATE AGAINST THE HYPOTHESIS OF ORGANIC EVOLUTION? By W. G. A. Bonwill, D. D. S.

One of the thoughtful papers read before the Congress and reprinted from the *Transaction* with a folded *insert*. Illustrated. This paper caused a heated discussion in the section which the reader will find in Volume 1., page 226.

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News Summary.

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It is better to lose a pint of blood than to have a nerve tapped.

If we could only use anti-toxine in pyorrhoea how the annales would jingle.

Mr. Demontporcelet, one of the teachers in the Institut Odontotechnique, is deceased.

One of the "eau oxygeni" manufacturers has his trade mark O! before H<sub>2</sub> O<sub>2</sub>. O O O!

Acetic acid 7 per cent is more powerful than corrosive sublimate. (Johns Hopkins reports).

Try a little No. 4 tinfoil or shavings of tin when you intend to use amalgam and see how it works.

Will we ever see a "Jecko" again? Wonder where he, she or it is—on a dusty shelf or where?

Sulphur has been recommended by L. N. Seymour, D. D. S., for cementing inlays, metallic and porcelain.

Dr. A. H. Peck has succeeded to the chair of Materia Medica and therapeutics formerly held by Dr. A. W. Harlan in the Chicago College.

A movement is on foot to attach a dental department to the University of Texas. We nominate John C. Storey, M. D., for Dean.

The Illinois State Board of Dental Examiners has decided to not issue a permit to practice to any undergraduate during the actual college term from September to June inclusive.

It is possible to produce chloroform narcosis when one is asleep. Recently a child seven years of age was chloroformed while asleep and a tooth was extracted; the child awoke two hours afterward.

The Cincinnati Hospital, one of the largest in the country, recently added to its Clinical Department a staff of Consulting Dentists. Drs. H. A. Smith and W. D. Kempton received the appointments.

ONE death from hypnosis has been reported so far—in Germany. There are no hypnotists in Chicago in the dental ranks as yet. We suppose that a hypnotic post-graduate school of dentistry will be the next work of some ambitious *clientless* dentist.

The American Dental Association got a divorce from clinics at the late meeting at Old Point Comfort. This staid and dignified body should not try to usurp the function of a post-graduate school of technics; science, a little theory and large notes on Practice with education and literature should satisfy it.

A man in England swallowed a vulcanite plate holding two central incisors, and large enough to extend from cuspid to cuspid, with two clasps attached at either end of the piece. After a few days living on bread, oatmeal, rice and vegetables it was passed through the anus—not having caused any pain or bleeding.

The glad New Year, 1895, faces us. Wonder where you will be this time a year hence. No matter, but do not forget to send ten dollars for a set of the Transactions of the World's Columbian Dental Congress. Send to Dr. J. S. Marshall, 34 Washington St., before they are all gone. The work has been electrotyped and when an extra five hundred are needed he can have them struck off. No library will be complete without the two volumes.

Huchard considers digitalis the remedy *par excellence* in feebleness of the heart in cardiac disease. Strophanthus calms the heart without strengthening it, and exercises but little influence on the urine. Spartein is a tonic to the heart, but has no diuretic action. Caffein and theobromin excite diuresis and may act favorably in feeble conditions. The author has also administered cactus grandiflorus, coronilla, and other similar remedies, but still holds that digitalis is the most marvellous weapon in the therapeutic arsenal. Without this powerful drug cardiac therapeutics does not exist.

"The Skin of His Teeth" is the subject of a discourse by Mr. F. T. Paul, of Liverpool. Nasmyth's membrane is little thought of in dental practice; without looking in a book how many dentists could tell off-hand its origin, what becomes of it and its uses, if any? Even such a small thing as a tooth has caused philosophers to cease philosophizing, generals to lose battles, preachers to lose their thread of discourse and poets to write drivel instead of sonnets or elegiacs.

Have you ever used a porcelain inlay? If not try one in the labial face of an oral tooth. Inlays of white or grey vulcanite may be used on bicuspid or molars. Celluloid might be utilized or the so-called zylonite. Many metallic

inlays may be made much more quickly than a filling, especially for deep seated cavities not exposed to view. By soldering a loop to the under surface they may be set with a hard cement or gutta-percha and will prove durable.

The oldest dental society in Chicago holds its meetings in cramped quarters—not enough room for one-half the membership, no place for visitors, no conveniences for illustration of papers, no light, no ventilation, nothing attractive. How the society can be expected to grow and attract visitors we do not know. Why cannot all the societies make arrangements to meet in the same place, on different evenings, and try and make it comfortable for everybody?

The effort of last year, beg pardon, the year before had its effect on the attendance and the character of the proceedings of nearly all dental societies in the United States. A new era is beginning, the bad times (financially) are about over and the cheerful dentist must look forward. Do not look down in the mouth, improve your opportunities. Study, invent, improve, resolve to render better service than ever and you will wear a ribbon, if not *the* ribbon, as Sherlock Holmes says.

Di-iodoform is to be used in place of iodoform, being almost odorless. It is a germicide. (*Phar. Soc. de Paris*).

R	Acid carbolic (melted).....	minims L.
	Acid Acetic.....	" XL.
	Water.....	3 oz.
M.		

*Sig.* diluted, as an astringent and stimulant in the antrum or in the mouth. Around carious and necrosed bone, in sinuses, etc.

Queer. A card came the other day, saying:

For administering gas (?).....\$1.00

For extracting each tooth..... 50

Has it come to this, in a cosmopolitan city, that a professional extractor of teeth will advertise to the profession such inconsequential fees as an inducement for patronage?

The fees (advertised) by the "high up" dental parlors and the "low down," joints on the Bowery are equal to the above. Even a shilling in England is considered not half enough for extracting; half a crown being about the smallest fee for such an operation. Don't do it again. Raise your fees.

We have enjoyed such a long rest from incorporations of new dental colleges in Illinois that we are growing heartsick, tired and hopeless for the future. But, no, we forget the Parlor, the Institute, the Associations, ancient and modern, superior and inferior, from New Orleans to Boston, San Francisco to Philadelphia, New York to Chicago, all these and many more flourish in our midst; they are urban, suburban, metropolitan, cosmopolitan, *urbs in horto, polyglotta et Italeona*. Oh, no, we are not filled with *ennui*, we are growing. This is no longer a village, it is the home of the two million club, the paradise of dental batteries, the resting place of the fabricator of the incisor gold. crown and other aggravations of public decency. Were it not for such blemishes on the horizon, 1895 would have a too, too brilliant promise for all of us.

## LOCAL ANAESTHETIC.

R Chloral Hydrate,  
 Gum Camphor.  
 Cocain Hydrochlorate.

{ aa gr. LXXV.  
 gr. VI.

M. Triturate in a mortar until liquified.

Sig. Use as a local anæsthetic on the skin, mucous membrane or hypodermatically. This may be used after opening an abscess, in the socket after extracting a tooth—for removing pulp or portions of a pulp. Use it also in pyorrhea pockets before removing deposits. In odontalgia, any solution up to 20 per cent. cocain may be used.

## GOOD READING.

Two of the best articles of the year 1894 in dental journals will be found in the *British Journal of Dental Science*, General Pathology and Surgery, by E. W. Roughton, M. D., and in *The Dental Record* the running article, Dental Microscopy, by A. Hopewell Smith, L. R. C. P., London. Any student or old or young practitioner could not fail to be benefited by reading both of the above continued articles. Both are illustrated copiously and the pictures are well done and understandable.

## THE DENTAL PROTECTIVE ASSOCIATION.

## ANNUAL MEETING.

The sixth annual meeting was held at the Grand Pacific Hotel, December, 15, 1894. Officers were elected as follows: J. N. Crouse, president; E. D. Swain, secretary, and Truman W. Brophy, director. An auditing committee was appointed to examine the accounts of the Association, and reported them to be correct.

## HAYDEN DENTAL SOCIETY OF CHICAGO.

The annual meeting of the Hayden Dental Society was held on Wednesday evening, December 19. A paper on "Anæsthesia" was read by Dr. A. J. Oakey, and a brief report of the semi-centennial celebration of the discovery of Anæsthesia, was read by Dr. Louis Ottofy. The following officers were elected for the ensuing year: President, T. E. Powell; Vice-President J. Messenger; Secretary, A. J. Oakey; Treasurer, M. B. Rimes. Board of Directors to January, 1898, Louis Ottofy. The Society will hold its annual banquet on the third Monday in January, 1895.

## ODONTOLOGICAL SOCIETY OF NEW YORK.

## OFFICERS FOR 1894-5.

President, A. L. Northrop; Vice-President, Wm. Carr; Secretary, A. R. Starr; Treasurer, J. Bond Littig; Corresponding Secretary, Geo. A. Wilson; Curator, J. Adams Bishop.

## EXECUTIVE COMMITTEE.

S. G. Perry; Wm. Jarvie; W. W. Walker, Chairman, 58 W. 50th street, New York.



PRESCRIBE

# LISTERINE

FOR PATIENTS WEARING  
BRIDGE WORK OR DENTURES,  
AND AS A GENERAL

## Antiseptic and Prophylactic Wash

FOR THE MOUTH AND TEETH.

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**LISTERINE** Is kept in stock by leading dealers in drugs everywhere, but in consequence of the prevalence of the SUBSTITUTION EVIL we earnestly request DENTAL PRACTITIONERS to

**PRESCRIBE LISTERINE IN THE ORIGINAL PACKAGE.**

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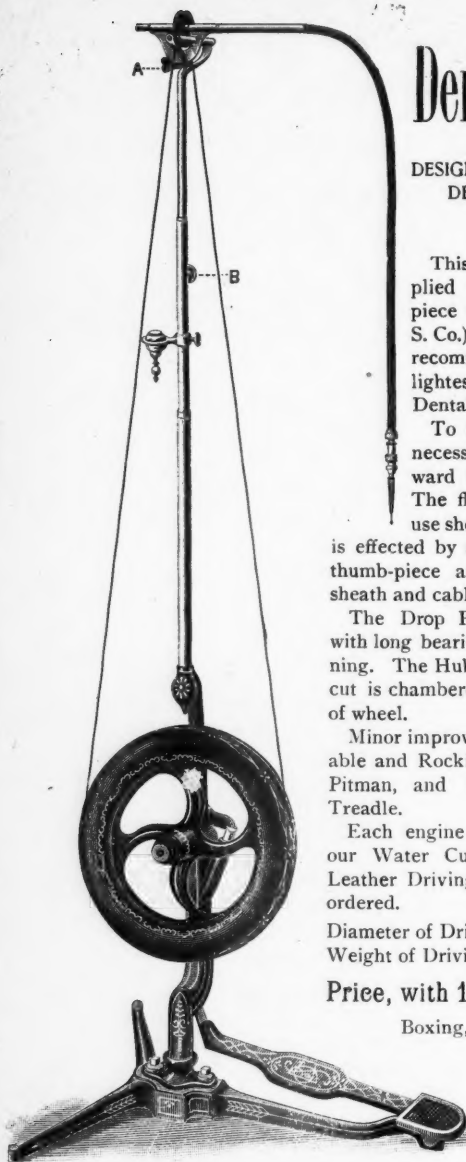
LISTERINE is invaluable for the care and preservation of the teeth. It promptly destroys all odors emanating from diseased gums and teeth, and imparts to the mucous surfaces a sense of cleanliness and purification; used after eating acid fruit, etc., it restores the alkaline condition of the mouth necessary for the welfare of the teeth, and employed systematically it will retard decay and tend to keep the teeth and gums in a healthy state. LISTERINE is valuable for the purification of artificial dentures and for the treatment of all soreness of the oral cavity resulting from their use. Patients wearing bridge work should constantly employ a LISTERINE wash of agreeable strength.

LISTERINE is used in various degrees of dilution; one to two ounces of LISTERINE to a pint of water will be found sufficiently powerful for the general care of the deciduous teeth of children, whilst a solution composed of one part LISTERINE and three parts water will be found of agreeable and thoroughly efficient strength for employment upon the brush and as a daily wash for free use in the oral cavity, in the care and preservation of the permanent teeth.

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APPLICATION TO THE MANUFACTURERS,

**LAMBERT PHARMACAL COMPANY,**  
ST. LOUIS, MO.



Patent Applied For.

## No. 1 Dental Engine.

DESIGNED AND MADE BY THE  
DENTAL PROTECTIVE  
SUPPLY CO.

This is a Cable Engine, supplied with our No. 1 Hand-piece (also made by the D. P. S. Co.), and can be confidently recommended as one of the lightest and easiest running Dental Engines made.

To raise the arm it is only necessary to give a slight upward toss to the hand-piece. The flexible arm when not in use should hang vertically. This is effected by a slight pressure on the thumb-piece at A, and prevents the sheath and cable from becoming set.

The Drop Pulley Head is supplied with long bearings, insuring steady running. The Hub, as will be seen in the cut is chambered so as to center weight of wheel.

Minor improvements are: An Adjustable and Rocking Upright, Spring Steel Pitman, and Rubber Heel-Pad for Treadle.

Each engine is supplied with one of our Water Cups, and with Twisted Leather Driving Belt, unless otherwise ordered.

Diameter of Driving Wheel... 12 inches

Weight of Driving Wheel..... 13 lbs

Price, with 14 Instruments, \$43.

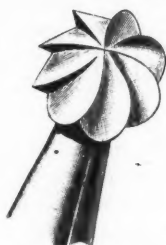
Boxing, 75 cents extra.

DENTAL  
PROTECTIVE SUPPLY  
COMPANY,

Chicago, - - - Illinois.

# The Dual-Blade Bur

(SELF-CLEANSING.)



Patent Applied For.



Patent Applied For.

## EXAMINE THE BLADES.

These twin blades entirely traverse the cutting surface of the Bur. The blades are stone-cut and brought to a fine keen edge. These Burs will be found to clear themselves thoroughly when in use, enabling the operator to rapidly cut—not *grind*—Dentine, and prepare cavities with the least possible pain to the patient. This is what we make Burs for—**ADAPTABILITY TO CUT SENSITIVE DENTINE**—and that's what they are used for! We wont enlarge upon their capabilities for drilling steel or glass, though they will do so, but for cutting sensitive Dentine with the minimum of pain to the patient, our "Dual-Blade" Burs have no equal.

WHEN ORDERING PLEASE STATE THE STYLE REQUIRED.



For No. 1 and 3.  
Right Angle  
Attachments.



For Universal Hand-Pieces.



For No. 2.  
Right Angle  
Attachment.

Kept in Stock in the following shapes and sizes:

ROUND.  
WHEEL.  
CONE.  
INVERTED CONE.  
PEAR.  
BUD.  
POINTED FISSURE.  
SQUARE FISSURE.  
OVAL.

### UNIVERSAL AND RIGHT ANGLE BURS.

Sizes 0 to 7 Inclusive, \$2.00 Per Doz.

Sizes 8 to 11 Inclusive

(Universal Burs Only) ..... \$2.75 Per Doz.

### QUANTITY PRICES.

Burs—Universal and Right Angle (doz. price, \$2.00)....per half gross..\$10.50

" —Sizes 8 to 11 (doz. price, \$2.75) ..... " " .. 14.50

Send for sample dozen and enclose \$2.00.

**DENTAL PROTECTIVE SUPPLY CO.,**

CHICAGO, - - - ILLINOIS.

# "NO. 1" HANDPIECE.

Designed and Manufactured by

## The Dental Protective Supply Co.



A glance at the accompanying cuts illustrating this Handpiece will demonstrate the simplicity of its mechanism.

We have endeavored to design and place before the profession the most simple and durable Handpiece made.

The special features of the Handpiece are the double end chuck, the improved locking device, and long and efficient bearings.

Ample provision has been made for taking up all wear, and we guarantee that if the bearing surfaces are kept clean and well oiled, that this Handpiece will last for years, and prove the best that has ever been placed upon the market.

It is adapted to hold different forms of bit shanks (except cone journal) which can be inserted or taken out from the Handpiece while the engine is in motion; it is also designed so that it can be attached to any Dental Engine, and will fit all ordinary right angle attachments.

Owing to the entire absence of screws the Handpiece can be taken apart without the use of wrench or screw-driver, and is so constructed that escape of oil upon the hand of the operator,—an objectionable feature in some handpieces—is entirely avoided.

In ordering our No. 1 Handpiece, it is essential that you give all necessary particulars as to the style of your engine and attachments.

PRICE - - - - \$10.00.

—ORDER DIRECT FROM—

THE DENTAL PROTECTIVE SUPPLY CO.

CHICAGO, ILL.

Patent Applied For.

# "NO. 1" HANDPIECE.

## DIRECTIONS FOR USE.

### To Fasten Bit in Handpiece.

Push the sleeve H forward (which opens the split chuck) insert the Bit in spindle and draw back the sleeve H as far as it will go.

### To Oil Handpiece.

Unscrew the milled nut A (giving it about 4 turns), take out B, and then remove the sheath. Lubricate at back bearing L, and at coned portion of spindle for forward bearing, and also on sliding collar C. Screw sheath back on collar, replace B in its seat on H (being very careful to see that the small lug on B engages in the groove of C), and screw milled nut A back in place.

### To Take Up Wear.

If the spindle becomes loose in its bearing a slight turn of the adjusting nut L (which has left hand thread) and jamb nut M will take up all wear.

### To Attach Handpiece to Any Cable Engine.

Unscrew the swivel on end of Handpiece which exposes the coupling, unscrew the latter from spindle, and solder cable in end with the two flats milled on.

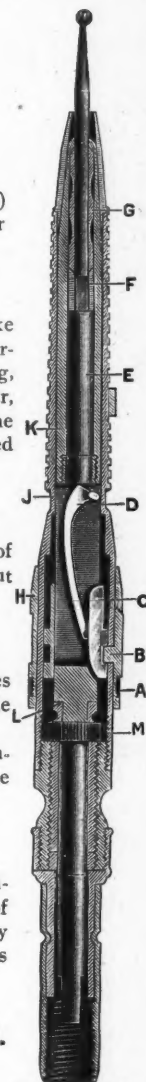
Screw coupling back in place again tightly, to avoid unscrewing when running backwards, attach swivel to flexible sheath and screw back in place.

### Handpiece Repairs.

We would draw your special attention to the extra facilities which we possess for the efficient and prompt repairing of Handpieces. We have a staff of skillful workmen constantly engaged on this class of work, and Handpieces entrusted to us for repair will receive careful attention.

THE DENTAL PROTECTIVE SUPPLY CO.

CHICAGO, ILL.



Patent Applied For.

# FELLOWSHIP GOLD FOIL.

$\frac{1}{8}$ Oz.

No.



THE DENTAL PROTECTIVE SUPPLY CO. OF THE U. S.  
CHICAGO, ILL.

We can confidently recommend this Foil as being thoroughly reliable in every desirable quality. The demand for this make of gold is constantly increasing, and is the best guarantee of its uniform fine qualities.

**Soft Semi-Cohesive** and **Extra Cohesive Foil** IN ALL NUMBERS.

**Rolled Gold Foil, Extra Cohesive,** FROM NO. 20 UPWARDS.

Price, per $\frac{1}{8}$ oz.....	\$ 4 00
“ “ $\frac{1}{2}$ oz.....	15 00
“ “ oz.....	30 00
“ “ 2 oz.....	58 00

DENTAL PROTECTIVE SUPPLY CO.,  
CHICAGO, - - - - ILLINOIS.



# Fellowship Gold Cylinders



Plain.....	Nos. 8	7	6	5	4	3	2	1	0
Corrugated—	Nos. 1/2	3/4	1	2	3	4	5		

## FELLOWSHIP:

PLAIN CYLINDERS, SOFT AND COHESIVE.

CORRUGATED CYLINDERS, SOFT AND COHESIVE.

Price, per	1/8 oz.....	\$ 4.00
" "	1/2 oz.....	15.00
" "	oz.....	30.00
" "	2 oz.....	58.00

Each box of Plain Cylinders is labeled, showing the proportion of a sheet of Foil contained in each Cylinder as follows:

### SMALL.

In No. 8, 40 Cylinders,—1 Sheet of No. 4 Foil.

" " 7, 30 " " " " "

" " 6, 20 " " " " "

### MEDIUM.

In No. 5, 12 Cylinders,—1 Sheet of No. 4 Foil.

" " 4, 8 " " " " "

" " 3, 4 " " " " "

### LARGE.

In No. 2, each Cylinder contains 1/2 Sheet of No. 4 Foil.

" " 1, " " " " "

" " 0, " " " " "

**DENTAL PROTECTIVE SUPPLY CO.,**  
CHICAGO, - - - ILLINOIS.

DENTAL PROTECTIVE SUPPLY CO.,  
CHICAGO, ILLINOIS.

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No. 1 ALLOY.

IN TWO GRITS—FINE AND MEDIUM.

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Price, per oz., Troy, \$2.50; 2 ozs., \$4.50; 5 ozs., \$10.00.

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This Alloy has been adopted after exhaustive trials from the very best formula. It **sets quickly**, has fine **edge strength**, is a **light grey color**, does **not discolor** in the mouth, and owing to the selection of the correct proportion of the metals it is composed of, neither **shrinks** nor **expands**.

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DENTAL PROTECTIVE SUPPLY CO.,  
CHICAGO - - - - ILLINOIS.

# DENTAL PROTECTIVE SUPPLY CO., CHICAGO, ILL.

## WATER CUP FOR DENTAL ENGINE.



Nickel-plated with bush ring complete to enable it to be fitted to any Dental engine.....

PRICE.

**\$1.50**

This is a most useful specialty for attachment to engine upright, the Holder carrying the water in the handiest possible position for the busy operator.

The Cup is evenly balanced at A and B and swings, keeping the water level.

To replenish the water supply press back the spring C and the cup can easily be detached.

By the use of a bush ring supplied with each Cup, and by adjusting the screw at D, the Water Cup can be fitted in a convenient position in any Dental office.

The above cut is about one-half the actual size of Water Cup.

In ordering please state what engine you are desirous of attaching it to, so as to enable us to send the proper bush ring.

ORDER DIRECT FROM

**DENTAL PROTECTIVE SUPPLY CO., Chicago, Ill.**

# The Dental Protective Supply Co.

Mineral



Teeth.

A VIEW OF THE TOOTH AND RUBBER FACTORY.

We are pleased to announce that our Teeth are now under process of manufacture in the above Factory in Chicago. In our next issue of the Dental Digest we hope to state exactly when we shall be ready to supply the market.

As to the Teeth we can only repeat our previous opinion backed by careful tests, that they are

## The Best Teeth a Dentist Can Buy.

The fineness of texture, exquisite coloring, bony life-like appearance, and unusual strength, place them in the front rank of Artificial Teeth.

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The Dental Protective Supply Company,  
CHICAGO, ILL.

### **PINK RUBBER.**

"English Rose Pink" imported, made from selected Para Gum, retains a fine polish and can be confidently recommended to uphold the high reputation that English Pink Rubbers have in this country.

### **EXCAVATORS.**

Prices, No 3 Light, per lb. \$ 6.00

" 4 Dark " " 7.00

We carry a large selection of these in all patterns and sizes. Blued

Handles, price per doz.....\$2.00

### **CHISELS, SCALERS.** Both in Assorted patterns.

File Cut Handles, Nickel Plated, price each.....\$ .50

Cone socket Points, price each......35

### **NERVE EXTRACTORS.**

Barbed; tempered by a new process. Price per doz.....\$ .50

### **CONTINUOUS GUM BODY AND ENAMEL, ROSE'S.**

A low fusing body with practically no shrinkage, suitable for English or American Teeth and can be lined with vulcanite or platina.

Body or Enamel. Per box, each.....\$2 00

### **PLUGGERS AND PLUGGER POINTS.**

We can Supply these in any of the well known sets either for electric mallet or hand, with serrations 100 or 200 to the inch. Please specify when ordering. Prices on application.

### **REPAIR WORK.**

We have a staff of skilled workmen in our Chicago factory engaged on repairs and are prepared to guarantee first-class work.

Cavity Burs, recut and stoned.....\$ .60 per doz.

Finishing " " " ..... 1.20 "

Excavators, repointed......75 to \$1 00 "

Pluggers, re-serrated..... 1.50 "

" Re-serrating, Varney's or other fine-cut Pluggers 3.00 "

Nickel Plating Forceps.....each .50

All repair work is done at our factory and therefore under our supervision. Should your handpiece be out of order send it to us, for probably it can be repaired; if so, we have special facilities for such work.

## **The Dental Protective Supply Co.,**

**CHICAGO, - ILLINOIS.**

# GOULD DENTAL CHAIR.



Fig. II—Normal.

We would merely call your attention to a few of its Advantages over all other Dental Chairs:—

- 1st. The Gould is the only first class low priced chair.
- 2nd. The Gould is the only low priced pedal lever chair.
- 3rd. The Gould has more and better movements than any high priced chair made.
- 4th. The Gould is the **only** chair that has the Horizontal Anæsthetic Position.
- 5th. The Gould is the **only** chair that has the Chloroform Narcosis Position.
- 6th. The Gould is the **only** complete chair, requiring "no extras"
- 7th. The Gould obtains **all the positions** secured by other chairs and more.
- 8th. The Gould chair has the most satisfactory head rest made
- 9th. The Gould is the **only** chair made that gives you the side tilt without "extra cost."
- 10th. The Gould is the simplest and therefore the easiest to keep in order.
- 11th. The Gould is the **only** chair with which an Elegant Nickel Spittoon is furnished Free
- 12th. The Gould is the **only** chair that can be tilted forward for taking impressions.
- 13th. The Gould is more convenient to the operator than any other.
- 14th. The Gould gives satisfaction when others fail.
- 15th. The Gould is the **best and cheapest** chair in the world.
- 16th. The Gould is sold on its merits and is warranted to be as represented.



Fig. XIV—Chloroform Narcosis.

## CANTON SURGICAL AND DENTAL CHAIR CO.,

38 to 54 E. Eighth and 50 to 54 S. Walnut Sts., CANTON, OHIO.

Sole Manufacturers Gould Dental, Gould Motor Dental and "Yale" Surgical Chairs, Electric Dental Engines and Brackets, Fletcher Fountain Spittoons, Foot Power and Electric Cord and Cable Dental Engines, etc., &c.

### "THE BEST STRIP MADE."

#### Dr. Howard's Dental Finishing Cloth Strips.

Made in four grits—Coarse, Medium Coarse, Medium, Fine, and in three widths Broad, Medium, Narrow. Put up mixed or separate, as desired, in boxes containing an amount equal to one gross, of medium width, seven inches long. Send for them if your dealer does not keep them. Manufactured only by

CHAS. T. HOWARD, - - - ROCHESTER, N. Y.

## A ZINC PHOSPHATE CEMENT.

PREPARED BY

The Dental Protective Supply CO.,

"Lithos."

Price, per package, - - \$1.00.



# Publisher's Notice

## To the Profession

In this our second issue, we desire to thank those who have sent us such kindly words of greeting and encouragement from all parts of the world, and to express our appreciation as well to those who so promptly responded as subscribers to the DENTAL DIGEST.

We wish also to remind those who have not yet subscribed, that their names should be upon our list at once. The necessity for this journal is admitted on all sides.

Remember that the Dental Protective Association is the only organization which the dentists have *ever* had which has effectively protected them in their rights. There is not a dentist in the land, be he member of the Protective Association or not, but what owes much of his freedom to practice without let or hindrance to the existence of this organization. Remember that the DENTAL DIGEST is the Official Organ of this Association.

Don't forget that the object of the DENTAL DIGEST is to still further band the profession together against any and all unjust measures—to give each member from month to month a digest of the numerous publications in the dental world, to keep the profession fully informed in regard to all litigation in which dentists are vitally concerned, to inform them concerning patents which are worthless, to call their attention to new inventions and new methods in practice, etc., etc.

In short we propose to make the journal one of the *indispensable articles* in every well regulated dental office. To this end we most heartily invite your kindly criticism, your contributions on subjects of general interest, and your support.

Will those who have already sent in their own names, send in one or two additional names of subscribers; and may we not hope to hear from every progressive dentist who has not responded before another issue?

Will you not fill up the colored inset on our front page as soon as you have read this and forward immediately?

THE DENTAL PROTECTIVE SUPPLY CO.

Chicago, Illinois.

To the Dental Profession  
**THE DENTAL PROTECTIVE SUPPLY Co.**

Capital \$100,000.00

Incorporated under the State Laws of Illinois.

**SHARES \$25.00 EACH.**

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SEVERAL monied men, both in and out of the profession, who are interested in this undertaking and believe it to offer a sound and profitable investment, have subscribed for this stock upon the understanding that they shall relinquish their surplus holding to the members of the dental profession at par if so required within a reasonable time.

As it is the object of this movement to have every dentist join with us and possess a direct personal interest in the Dental Protective Supply Co. by subscribing for at least one share, we make this further offer to you to associate yourself with this enterprise. The shares are \$25.00 each, and a stockholder is liable *by law* only for the amount for which he subscribes. The stock will always be worth its face value through being at any time exchangeable for dental goods. All business will be conducted upon a strictly *cash* basis. Only stockholders will be allowed monthly credit equal to the amount paid upon their stock. A *bonus* will be allowed stockholders upon all dental supplies, and by conducting the business in an economical manner the investment will be made permanently profitable.

Why not help the movement? and study your own interests by filling out the blank opposite and return it with the first assessment of ten dollars per share to the

**Dental Protective Supply Co.**

Temporary business address

2231 Prairie Avenue

Chicago, Ill.

# CAPITAL STOCK

## SUBSCRIPTION BLANK.

*I, the undersigned, hereby subscribe for the number of shares set opposite my name, to the Capital Stock of*

**"The Dental Protective Supply Company,  
of the United States,"**

*and I agree to pay said Company for each share, the sum of  
TWENTY-FIVE DOLLARS (\$25.00) as the same may be called  
for by the Board of Directors of said Company.*

NAME OF SUBSCRIBER.	Number of Shares.	AMOUNT
Street Address .....		
County .....		
State .....		

### IMPORTANT NOTICE.

The attention of the Profession is called to the fact that by becoming **Stockholders** in the Dental Protective Supply Co. they will be entitled to a **Bonus** on all supplies when obtained **direct from us**. This Bonus, the details of which it would hardly be well to publish, will be credited on the monthly statement or added to the dividend, if thought best.

Sign the foregoing blank indicating how many shares to be taken, and enclose the same with ten dollars (\$10.00) for each share of stock subscribed for, (that sum being the amount of the first assessment,) and forward to

THE DENTAL PROTECTIVE SUPPLY CO.,

(Temporary Business Address,)

2231 PRAIRIE AVENUE, CHICAGO.

N. B.—A provisional receipt will be issued to the subscriber when the first assessment is paid.

The balance of \$15.00 per share will not be called for until after 1st March, 1895, and upon payment of same, the Stock Certificate will be issued.